HNOLOGY DEPT.

Chilton's MOTOR AGE

JUNE 1951

IC LIBRARY
1 3 1951
DETROIT



In This Issue:

Automotive Service Information

R v.20a June.-Nov. 1951

HASTINGS USES CHROME

where it does the most good

...ON THE OIL CONTROL RINGS



RIGHT FOR ★ RE-BORE ★ RE-RING ★ RE-SLEEVE

It's the oil control rings that usually determine the life of any set of piston rings. That's why Hastings adds chrome on the vital oil rings, where it does the most good.

For more than four years this Hastings engineering principle has been proved by amazing performance records. Users report three and four times conventional ring life—and under severe operating conditions.

Under *any* operating conditions, you'll get greater resistance to scuffing, less cylinder wall drag and longer life from Hastings Chrome Sets. Install them on your next heavy duty re-bore, re-ring or re-sleeve job.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN

Hastings Ltd., Toronto



HASTINGS

STEEL-VENT

PISTON RINGS

Tech

CHROME-FACED FOR HEAVY DUTY SERVICE

BALANCED UNDER CHASSIS *Service*



PERMATEX PENETRATING OIL
Instantly penetrates and frees frozen parts. Adheres to metal and lubricates even in the presence of water.

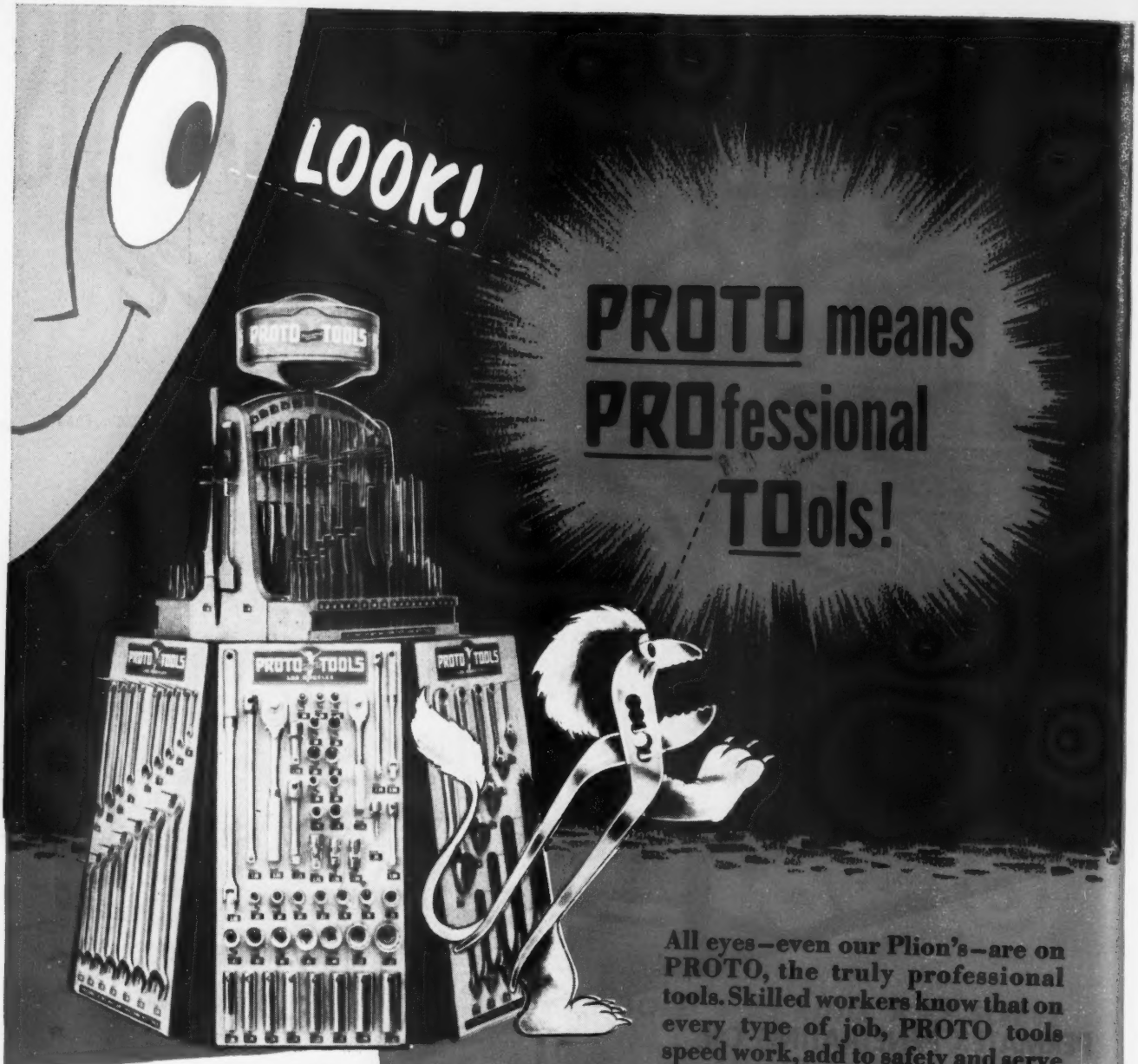
PERMATEX RUBBER LUBRICANT
Stops the grunts car owners gripe about. Will not cause rubber to swell or rot. Water will not wash it away.

PERMATEX KNEE ACTION-JACK-SHOCK ABSORBER OIL
For Lovejoy and Delco type shocks and all hydraulic jacks. Works perfectly in summer heat and winter cold. Non-corrosive, non-creeping and non-evaporating.

When you talk Permatex...
you're talking Quality!



PERMATEX COMPANY, INC., BROOKLYN 35, N.Y.



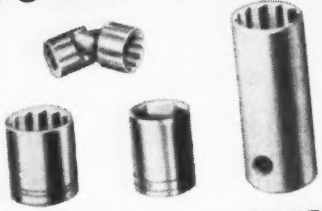
All eyes—even our Plion's—are on PROTO, the truly professional tools. Skilled workers know that on every type of job, PROTO tools speed work, add to safety and serve for many long years. They also know that each design is carefully job-tested to meet exacting professional standards. PROTO tools have the many extra-quality features that make you proud to own them—now and in the years ahead. Cast your eye on the extensive PROTO line at your dealer's—then buy the ones you need.

Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY

2226G Santa Fe Ave., Los Angeles 54, Calif.

TOOLAGRAM



To increase the utility of PROTO socket wrench handles and attachments, many new sizes and styles of sockets (thin-wall hexagon and ball-type universals, for example) have been added recently. Improvements to existing sockets include smaller outside diameters, better-shaped noses, deeper openings and larger bolt clearance holes.

5182

PROTO TOOLS

Professional Quality

REG. U.S. PAT. OFF.

LOS ANGELES

MADE IN U.S.A.

Chilton's MOTOR AGE

WITH WHICH IS COMBINED AUTOMOBILE TRADE JOURNAL

Reg. U. S. Pat. Off.

For THE AUTOMOTIVE SERVICE INDUSTRY

Vol. LXX, No. 7 June, 1951

Frank P. Tighe
Editor

Charles M. Kenyon
Managing Editor

J. K. Montgomery
Technical Editor

Arthur H. Nellen, Jr.
Service Editor

A. M. Ambrogi
Editorial Assistant

Marcus Ainsworth
Specifications Editor

Howard Kohlbrenner
Art Director

Leonard Westrate
Detroit News Editor

Joseph Geschelin
Detroit Technical Editor

G. H. Baker
Washington Editor

K. Rannells
Washington News Editor

R. Raymond Kay
Pacific Coast Editor

Member SBME Society of Business Magazine Editors

In This Issue . . .

Newscoop 37

Newscene 39

Report to Our Readers.....by *Frank P. Tighe* 41

Car Dealer Clinic.....by *Jack Rose* 42

Mechanics Make Winners at Indianapolis.....by *Jack Montgomery* 44

Troubleshooting and Adjusting Powerglide.....by *Jack Montgomery* 46

Pop Finds a Starter Stopper.....by *Charles M. Kenyon* 48

New Products Show Window..... 50

Care Saves Tires 55

The Million Dollar Look.....by *Arthur H. Nellen, Jr.* 56

How to Measure Frames..... 58

Automotive Service Information..... 59

Shop Kinks 80

Readers Clearing House 84

Calendar of Coming Events..... 150

Advertisers Index 172

Copyright 1951 by Chilton Company (Inc.)

G. C. BUZBY, President and Manager Automotive Division
E. H. MILLER, ADV. MGR. E. W. HEVNER, CIR. MGR.

REGIONAL MANAGERS

RUSSELL W. CASE, JR., Philadelphia
CURTIS F. MOSS, Chicago
H. M. WERTZ, Chicago
BEN E. BALL, Cleveland
J. A. LAANSMA, Detroit
A. T. ARNOLD, New York
R. J. BIRCH, San Francisco
L. H. JACKSON, Los Angeles

Offices: Philadelphia 39, Pa.—Chestnut & 56th Sts., Phone GRanite 4-5600, New York 17, N. Y.—100 E. 42nd St., Phone Murray Hill 5-8600, Chicago 1, Ill.—Room 916, London Guarantee & Accident Bldg., Phone Franklin 2-4243, Detroit 2, Mich.—1015 Stephenson Bldg., Phone Trinity 5-2090, Cleveland 14, Ohio—1030 National City Bank Building, Phone Cherry 4188, Washington 4, D. C.—1091 National Press Bldg., Phone Sterling 1844, 1845, 1846, San Francisco 4, Cal.—300 Montgomery St., Phone DOuglas 2-4393, Los Angeles 5, Cal.—3156 Wilshire Blvd., Phone DUnkirk 7-2119. Member of Audit Bureau of Circulation.

One of the Publications Owned by
CHILTON COMPANY (INC.)
Executive Offices
Chestnut and 56th Streets, Philadelphia 39, Pa., U.S.A.

Officers and Directors
JOS. S. HILDRETH, *President*
Vice-Presidents
G. C. BUZBY HARRY V. DUFFY P. M. FAHRENDORF
EVERIT B. TERHUNE
WILLIAM H. VALLAR, *Treasurer*
JOHN BLAIR MOFFETT, *Secretary*
GEORGE T. HOOK MAURICE E. COX
TOM C. CAMPBELL FRANK P. TIGHE
L. V. ROWLANDS
GEORGE MAISWINKLE, *Asst. Treas.*
PAUL WOOTON, *Washington Member of the Editorial Board*

MOTOR AGE, Vol. LXX, No. 7. Published monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39, Pa. Entered as Second-Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions, and all Latin-American countries $5.00 per year. Canadian $5.00; foreign $7.00 per year; single copies, 40 cents.

Raybestos

is used by more dealers than any other brake lining



Raybestos PG Sets and this certificate are featured month after month in the SATURDAY EVENING POST

Raybestos PG Brake Lining Sets, thoroughly *proving ground tested*, are delivered in the correct combination of linings for each make and model of car. That is why they last longer on today's vehicles, make safer stops in today's traffic.

PG Ray-BOND for bonding *PG drilled for riveting*

Raybestos

Raybestos Division of RAYBESTOS-MANHATTAN, INC., Bridgeport, Conn.

AMERICA'S BIGGEST SELLING BRAKE LINING

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Radiator Hose • Fan Belts • Mechanical Rubber Products • Rubber Covered Equipment • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls



MY KLUNKERS FLUNKED THE "PROFIT-TEST"... BUT

I'M OUT OF THE RED NOW WITH MY NEW WALKER JACKS

"PROFIT-TEST" your own jacks with a simple questionnaire like this:

Is your lifting equipment designed to handle, rapidly and efficiently, today's many new lifting problems?	☐ Yes ☐ No
Are your jacks strong enough for the loads you make them lift?	☐ Yes ☐ No
Do you have enough jacks to avoid costly delays to mechanics and customers?	☐ Yes ☐ No
Are you tying up costly jacks for lack of dependable, inexpensive axle supports?	☐ Yes ☐ No
Above all, are your jacks safe?	☐ Yes ☐ No

Get rid of time-killing, profit-wasting, "klunker" jacks. Go to your Walker Jobber. He has the proper jack for every job—*new deluxe Walker Jacks, engineered to meet the requirements of modern service.*

If you can't buy all you need at once, get a start with the jack you need most. Then add the rest as you can.

WALKER MANUFACTURING CO. OF WIS., RACINE, WIS.
Walker Jacks, Lifts, Exhaust Silencers, Oil Filters

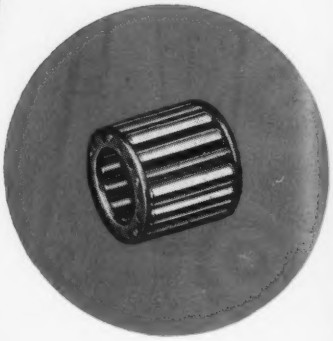
EVERY SHOP NEEDS THESE NEW WALKER TIME-AND-MONEY SAVERS

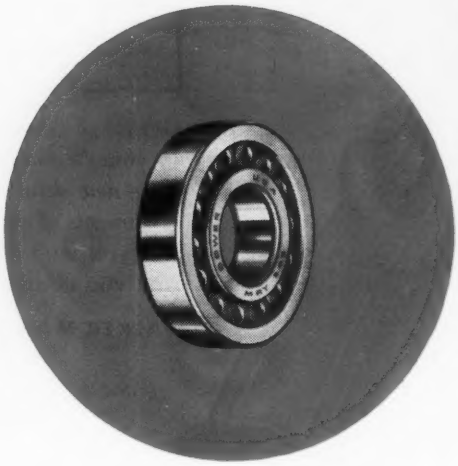
These new deluxe Walker *Greyhounds*, with the new "Gold Seal" power unit, earn their way on any service floor. Two models meet every shop requirement: No. 882, 2 tons capacity... No. 884, 4 tons capacity.



get 'em.... BOWER ROLLER BEARINGS from your FEDERAL-MOGUL Jobber!







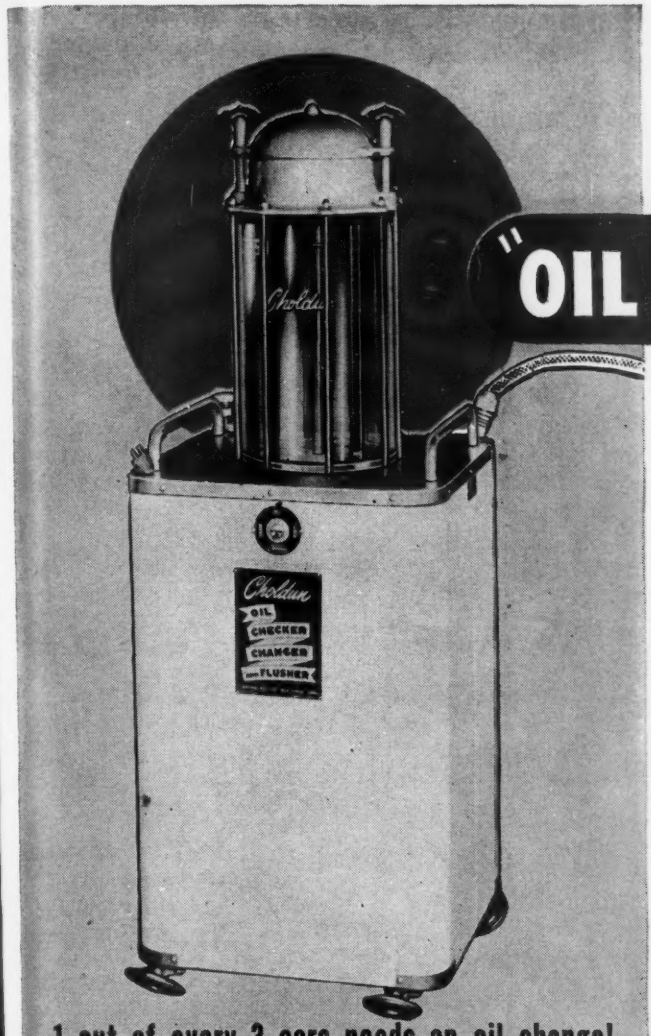
The roller bearing service provided by your Federal-Mogul jobber is unmatched in the industry. Here's why:

Bower Quality—identical with the bearings supplied to leading manufacturers of original equipment. Your Federal-Mogul jobber has complete automotive coverage in famous Bower Spher-O-Honed tapered roller bearings, *plus* popular numbers in straight roller bearings.

Federal-Mogul Service—through the most complete service network in the bearing business, Federal-Mogul makes Bower roller bearings *immediately* available. You get the parts you want —and you get 'em when you want 'em!

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

BEARING FEDERAL Mogul SERVICE



here's how Choldun's "OIL MERCHANDISER" $ELLS FOR YOU!

1 out of every 3 cars needs an oil change!

ARE YOU GETTING YOUR SHARE?

With the Choldun "Oil Merchandiser" you should sell a minimum of 3 additional oil changes a day. You should sell one flush job with every third oil change. You should sell one oil filter with every flush job.

You should earn:	3 oil changes	$2.25
	1 flush job	.50
	1 oil filter	.75
		$3.50 a day
		$105.00 in 30 days
		$210.00 in 60 days

Your PROFIT in 60 days should exceed the cost of this unit.

1 It's the only Unit that permits a VISUAL CHECK and examination of Oil. The Oil is withdrawn swiftly from the Crankcase through the Dipstick Hole where it can be SEEN, accurately CHECKED and even FELT while it is in the OIL MERCHANDISER'S Glass Cylinder.

2 It's the only Unit that permits the Customer to determine for himself by VISUAL OBSERVATION whether to add Oil or Change to new Oil—the old oil can be returned immediately if no Oil Change is desired—and either operation can be completed in a few moments! An Oil Check sells an Oil Change when you use Choldun's OIL MERCHANDISER.

3 It's the only Unit that permits a thorough flushing of the Crankcase—without running the Car Engine.

MAKE THE "DIPSTICK TEST" AND BE CONVINCED!

Assure yourself as well as your customer that all the oil has been removed from the crankcase by checking the dipstick reading in quarts against the oil in the calibrated cylinder.



Oil Merchandiser ready for service everywhere in the station

CHOLDUN MANUFACTURING CORP.
11 West 42nd Street, New York 18, N. Y.

☐ Please send me Complete Details on the "Oil Merchandiser"

☐ Please arrange for a Free Demonstration of the "Oil Merchandiser"

Name.....

Address.....

City..... Zone..... State.....

FREE

Choldun MEMA

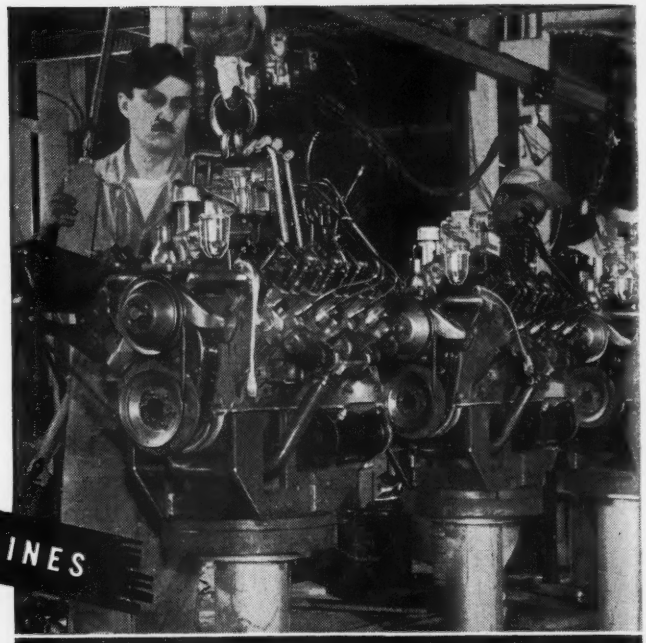
MANUFACTURING CORP.

New Haven, Conn.

SALES OFFICE: 11 WEST 42 STREET, NEW YORK 18, N. Y.
EXPORT OFFICE: 238 Main Street, Cambridge 42, Mass.

Springfield • Philadelphia • Pittsburgh • Atlanta • Detroit • Chicago
Kansas City • Dallas • Denver • Los Angeles • Toronto

Conformability in Piston Rings



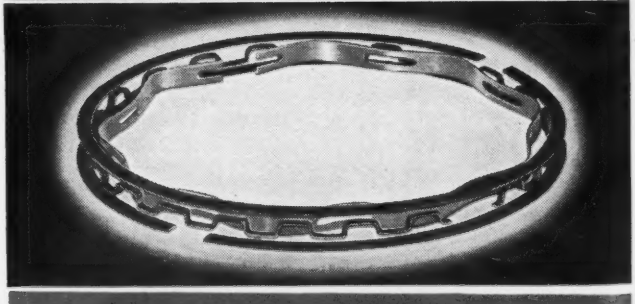
IMPORTANT IN NEW ENGINES



ESSENTIAL IN RE-RING JOBS!

The effort to develop more power . . . without increasing engine weight, engine cost, or consumption of fuel and oil . . . has naturally led to higher compressions, and, in turn, to higher heats and increased tendency to block distortion.

For this reason, rings that are highly conformable are more important than ever before in the manufacture of new engines. Obviously this holds true to an even greater degree in worn engines. Whenever cylinders become distorted or out-of-round, conformability in piston rings becomes vital. The control of blow-by and the maintenance of compression require the most conformable piston rings that can be had—and Pedrick has them! Get Pedrick rings in guaranteed Engineered Sets from your Pedrick jobber. WILKENING MANUFACTURING CO., Philadelphia 42, Pa. *In Canada:* Wilkening Manufacturing Company (Canada) Ltd., Toronto.



Here's Conformability—
THE SS4 OIL RING

- Conforms more readily to tapered and out-of-round cylinders
- Adapts itself to groove depth variations better than any other ring
- Greatest capacity to store and drain oil
- Most uniform pressure distribution
- Outlasts other oil rings by a wide margin

Pedrick®

"HEAT-SHAPED"

PISTON RINGS

IN GUARANTEED ENGINEERED SETS

FOR 31 YEARS, SUPPLIER OF PISTON RINGS TO LEADING VEHICLE AND ENGINE MANUFACTURERS



Brakes *must* be ready for any emergency! And dependable brake action demands balanced linings!

Why? Different shoes, even in the same brake, do different work, need different kinds of linings. Grey-Rock gives you balanced combinations to provide smoother, *safer* stops . . . with equal wear on all shoes, hence greater mileage.

In addition, Grey-Rock Balanced Linings eliminate dive, grab, hard pedal, and other brake troubles. For better and more profitable brake jobs, order Grey-Rock Balanced Braksets from your jobber. Ask him, too, about Grey-Rock's business-building promotional plans.

your customers need

BALANCED BRAKES



Only Grey-Rock *makes* BALANCED BRAKSET LININGS

Consistently advertised in
POST *and* **Country Gentleman**

RM

GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., **MANHEIM, PA.**

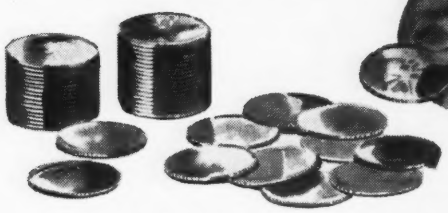
RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings · Brake Blocks · Clutch Facings
Fan Belts · Radiator Hose · Packings · Mechanical Rubber Products · Rubber Covered Equipment
Asbestos Textiles · Powdered Metal Products · Abrasive and Diamond Wheels · Bowling Balls

GET IT FROM YOUR JOBBER

(*Advertisement*)

"I keep 'em coming back"

says Walt Weyman





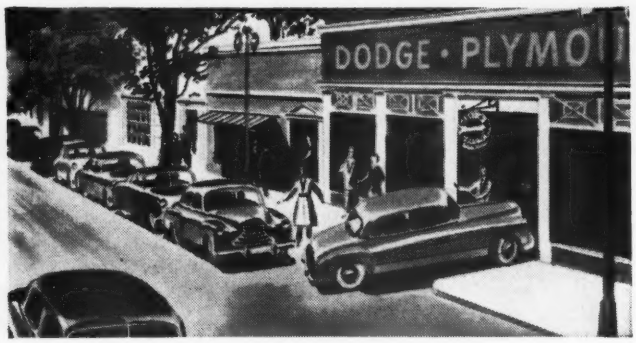


Reading time: 1 min., 43 seconds

The man who bought his tenth Dodge from Walt last week had bought his first with handfuls of twenty-dollar gold eagles.

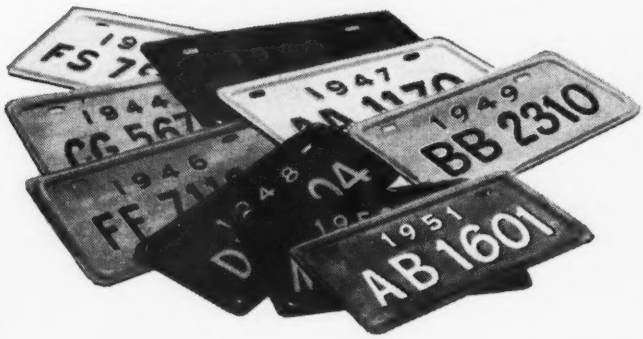
"That money looked mountain-high to me then," Walt recalls. "You see," he adds, "I learned the value of money the hard way. As an orphan I always pretty much had to pay for anything I got. I had to double the size of a paper route I had to make my way through high school. That took a lot of selling and a lot of extra service, too."

He'll tell you the car deals he's made have been on the same sound basis. He lined up with a dealer handling Dodge because he knew he was giving real value every time he sold a Dodge. Then he made it a point, personally, to see the value Dodge had built into the car was backed up by more than adequate service.



A few years later, his combination of value and service had won him so many satisfied customers he had the friendship of the entire community, and the confidence of a far-sighted banker. So when the Dodge dealership became available, the banker helped Walt in contacting the factory and arranging to take over the business. It was a big undertaking and Walt started to dig his way out by duplicating the energy and effort he had used on his paper route. He doubled the size of the business in less than a year.

Before long his growing sales put Walt in a position to re-invest earnings in a new plant, new from parts room to show room, from service garage to offices. Even when the war terminated new car deliveries, Walt didn't stop growing. His years of attention to service made it easy to concentrate on this phase of his business. Soon cars were backed up mornings for two blocks by owners who knew both the jobs and prices would be right at Walt's. To supplement this operation, he started shipping in used cars from three states.



Beginning with six employees, Walt now employs 32 people in his organization. "It's all a matter of keeping customers coming back, like that man who bought his tenth car just now," he explains. "This is a great business for any man who wants to give a full measure of service. I figure you can't miss if you keep the customers you sell coming back for the service you give them."

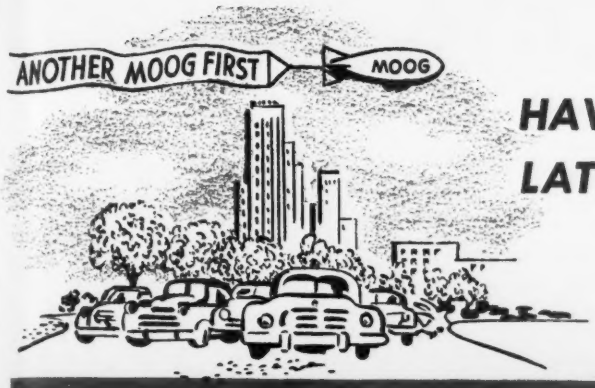
Write for our free booklet containing a number of these stories of accomplishments by enterprising men. Chrysler Corporation, 341 Massachusetts Ave., Highland Park 3, Mich.



Chrysler Corporation

PLYMOUTH • DODGE • DE SOTO • CHRYSLER • DODGE "Job-Rated" TRUCKS

Fine Cars of Great Value



HAVING OVERLOAD PROBLEMS ON LATE MODEL PASSENGER CARS?

HERE IS THE ANSWER!

NEW SPECIAL DESIGN 2-STAGE REAR SPRINGS

for all late model passenger cars equipped with rear leaf springs . . .



MUST BE INSTALLED IN PAIRS

These Moog 2-stage springs will give approximately the same ride as the regular springs when car is unloaded. They will give overload capacity up to about 500 pounds. If more than 500 pounds are to be added, include complete information with your order and extra leaves can be added to the design.

TO ORDER THIS SPECIAL DESIGN ADD LETTER "S" to regular Moog Spring Number

Here are a few of the more popular designs:

21-163S — 1940-51 Chevrolet
42-169S — 1949-50 Fords
66-101S — 1949-50-51 Mercury
78-247S & 78-333S — Chrysler, Desoto, Dodge, Plymouth (see Moog catalog for years and models.)

HERE'S WHAT THIS SPRING WILL DO:

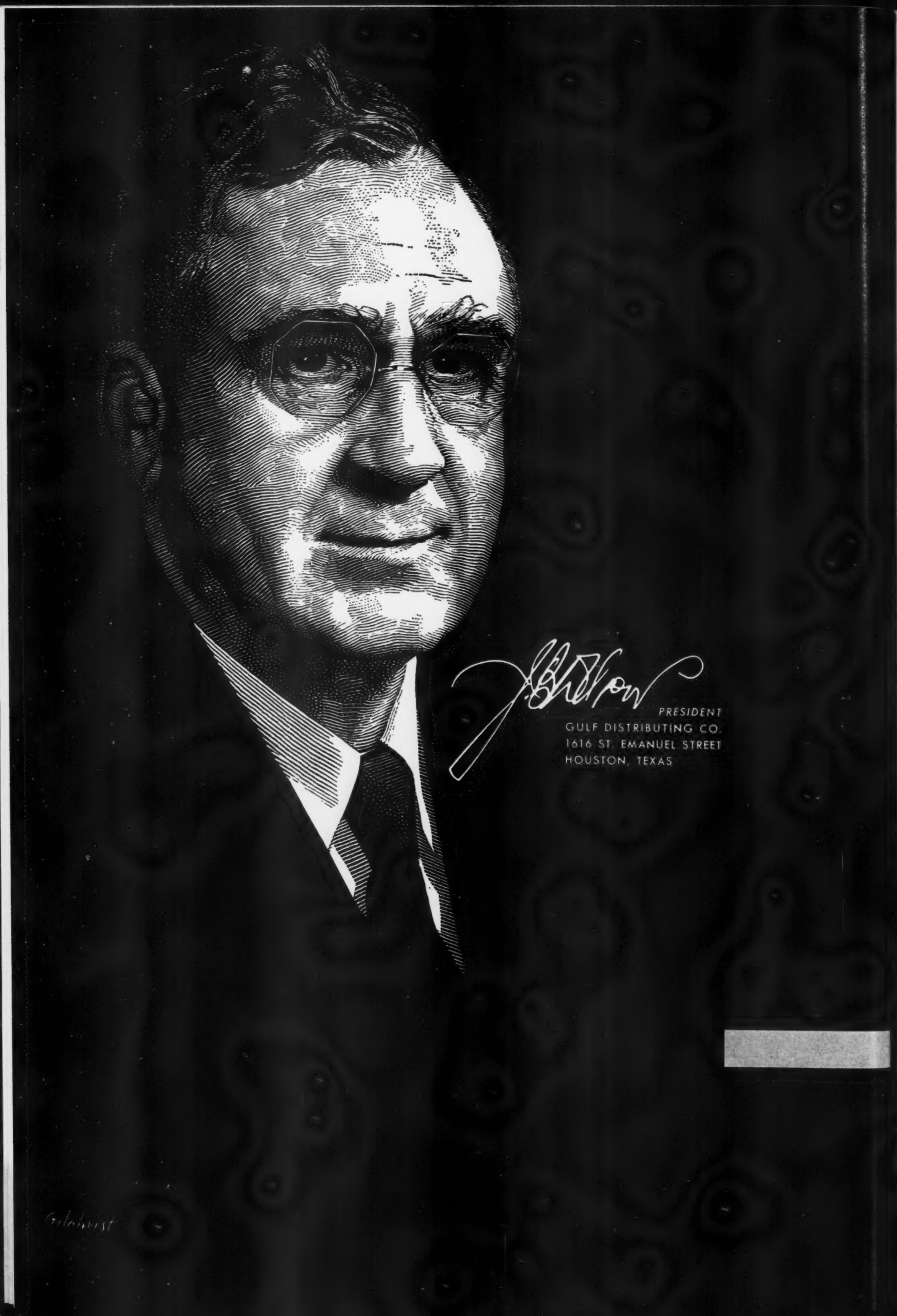
1. Maintain rear end height
2. Stabilize front end alignment
3. Improve ride
4. Excellent for taxis with variable loads
5. Ideal for rough driving conditions

GET IT FROM YOUR JOBBER

© M.I.I. 1951.

MOOG
A GREAT NAME IN AUTOMOTIVE MAINTENANCE

MOOG INDUSTRIES, INC., ST. LOUIS 14, MO.
Divisions:
ST. LOUIS SPRING COMPANY
MOOG PISTON RING COMPANY
MOOG COIL ACTION PARTS CO.



PRESIDENT
GULF DISTRIBUTING CO.
1616 ST. EMANUEL STREET
HOUSTON, TEXAS

"WE'RE OFTEN approached by battery companies asking us to handle their lines. But we're satisfied with the profitable Auto-Lite Battery line that we've carried for years," says J. B. Wilson.

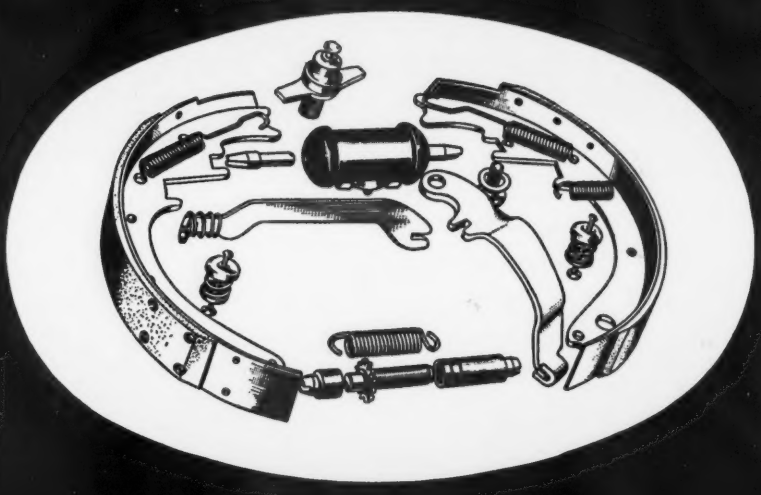
"Auto-Lite comes in with active sales support for us right where and when we need it. Powerful Sta-ful Battery advertising goes after the consumer market with network radio and television, national newspaper and magazine campaigns, and follows through with point-of-sale material, direct mail and dealer promotions.

"All this sales help . . . plus Auto-Lite Battery original equipment . . . and developments like the Auto-Lite Sta-ful Battery, make for a happy and profitable arrangement for any distributor."

AUTO-LITE BATTERIES



Buick brakes



– better for you all around!

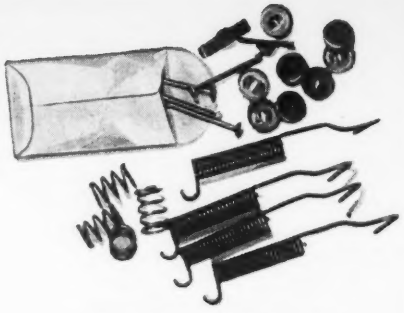
EXPENSIVE EQUIPMENT NOT NEEDED—to install riveted linings.

OVERSIZE SHOE AND LINING SETS – for use when drums require oversize replacements.

CUSTOMER SATISFACTION ASSURED—use of highest quality materials means long life.

COMPETITIVELY PRICED – to allow an attractive profit.

CONVENIENTLY STOCKED—by your nearest Buick dealer. See him for any Buick parts —and for helpful, friendly technical advice or service.



SAVE TIME WITH KITS—like this Buick brake overhaul kit. All normally replaced parts complete in one package.

ENGINEER APPROVED ACCESSORIES

BUICK

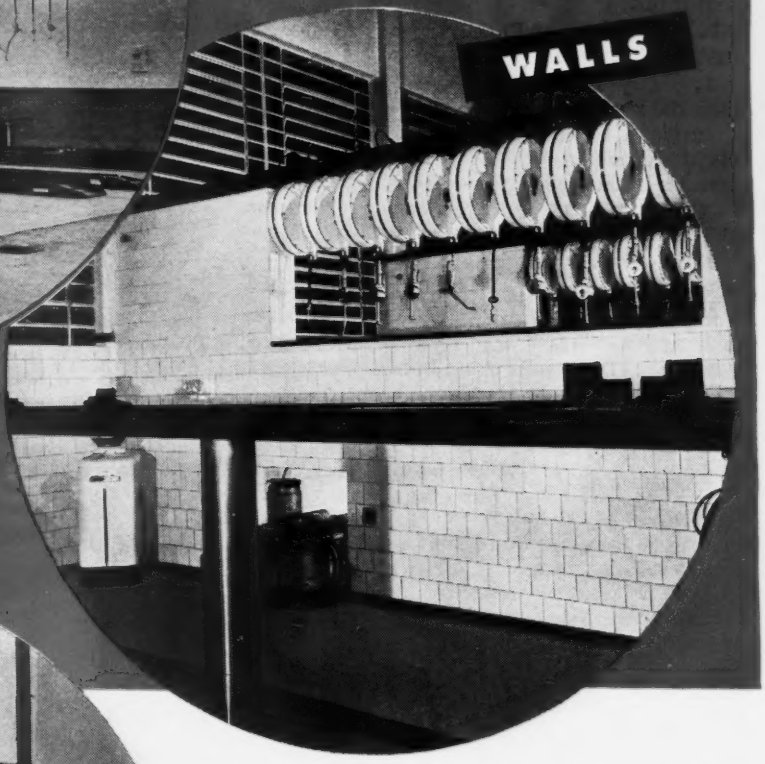
FACTORY ENGINEERED PARTS

Better work with Buick parts / see your Buick dealer

ARO the Leader!



OVERHEAD



WALLS



FLOORS

Aro meets today's needs better and *increases your profits!*

Make your lube department more efficient . . . attractive to more customers . . . and *more profitable for you* . . . with ARO Lube Equipment—*the leader!*

Use ARO Reels overhead . . . or ARO Cabinet Units . . . many ways to save space and speed up your service at low cost!
See your Aro Jobber.

The Aro Equipment Corporation, Bryan, Ohio
Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO

LUBE EQUIPMENT
Also . . . GREASE FITTINGS . . . AIR TOOLS . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS

(*Advertisement*)

MEETS OR EXCEEDS CAR MANUFACTURERS' RECOMMENDATIONS FOR ALL 1951 CARS

NEW Dynalube Motor Oil Combines in a Single Oil All the Finest Features of America's Premium Motor Oils . . . Actually Improves the Condition of Most Engines.

Whatever cars you service . . . newest '51 or earlier models . . . you can now offer your customers *greater engine protection* with NEW Sunoco Dynalube. All these important features are *combined* in this NEW heavy-duty premium motor oil:

1. Its tough **Heat-Resistant** body assures *long* motor oil mileage.

2. Fully **Detergent-Dispersant** — NEW Sunoco Dynalube cleans engines and keeps them clean. Road dust and contamination from normal combustion are held in harmless suspension until oil is drained at the regular interval. (For maximum protection we recommend a complete oil change every 1,000 miles.)

3. Free-Flowing and **Metal-Clinging** qualities of this new oil help avoid costly engine repairs.

4. Anti-Rust and **Anti-Acid**—counteracts two of the greatest causes of wear in any engine.

5. High **Film Strength** and **Ring-Sealing Action**—insure longer-lasting engine efficiency.



CERTIFIED TEST AAA 1JCT50

CERTIFIED for Long Mileage, Engine Cleanliness, Long Engine Life.

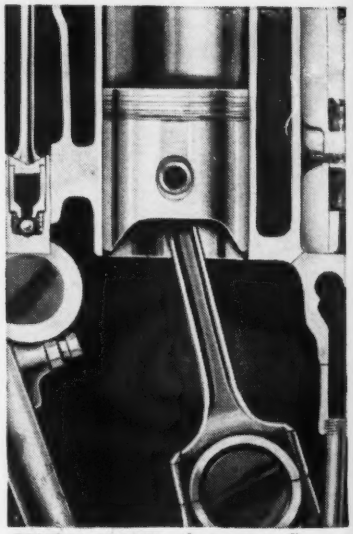
In AAA Supervised Road Test from Quebec to Key West and back . . . in all weather and over all types of roads . . . cars using NEW Sunoco Dynalube were driven over 2,000 miles, on the average, before a drop of oil had to be added.



CLEAN PISTON at right shows how NEW Sunoco Dynalube keeps rings free-acting . . . keeps combustion chamber deposits to a minimum. Fouled piston with stuck rings, at left, resulted from use of inferior motor oils. To prolong engine life . . . assure top performance . . . recommend NEW Sunoco Dynalube.



LAB FINDINGS. Valve on left shows heavy deposits resulting from use of inferior oils—a common cause of sluggish action and poor valve seating. Clean valve on right shows how NEW Sunoco Dynalube helps engines stay remarkably clean . . . keeps valves free-acting . . . maintains full engine power.



RESULTS PROVED that NEW Sunoco Dynalube combats acid and rust—two of the greatest causes of wear on piston rings and cylinder walls in any engine. NEW Sunoco Dynalube helps reduce engine repairs.

MEMO TO CAR DEALERS

To insure better satisfied customers and longer-lasting engine efficiency in every new car you sell, recommend that they use NEW Sunoco Dynalube Motor Oil exclusively. And for high anti-knock performance, suggest they use Blue Sunoco—the high-test gasoline that sells at regular gas price.

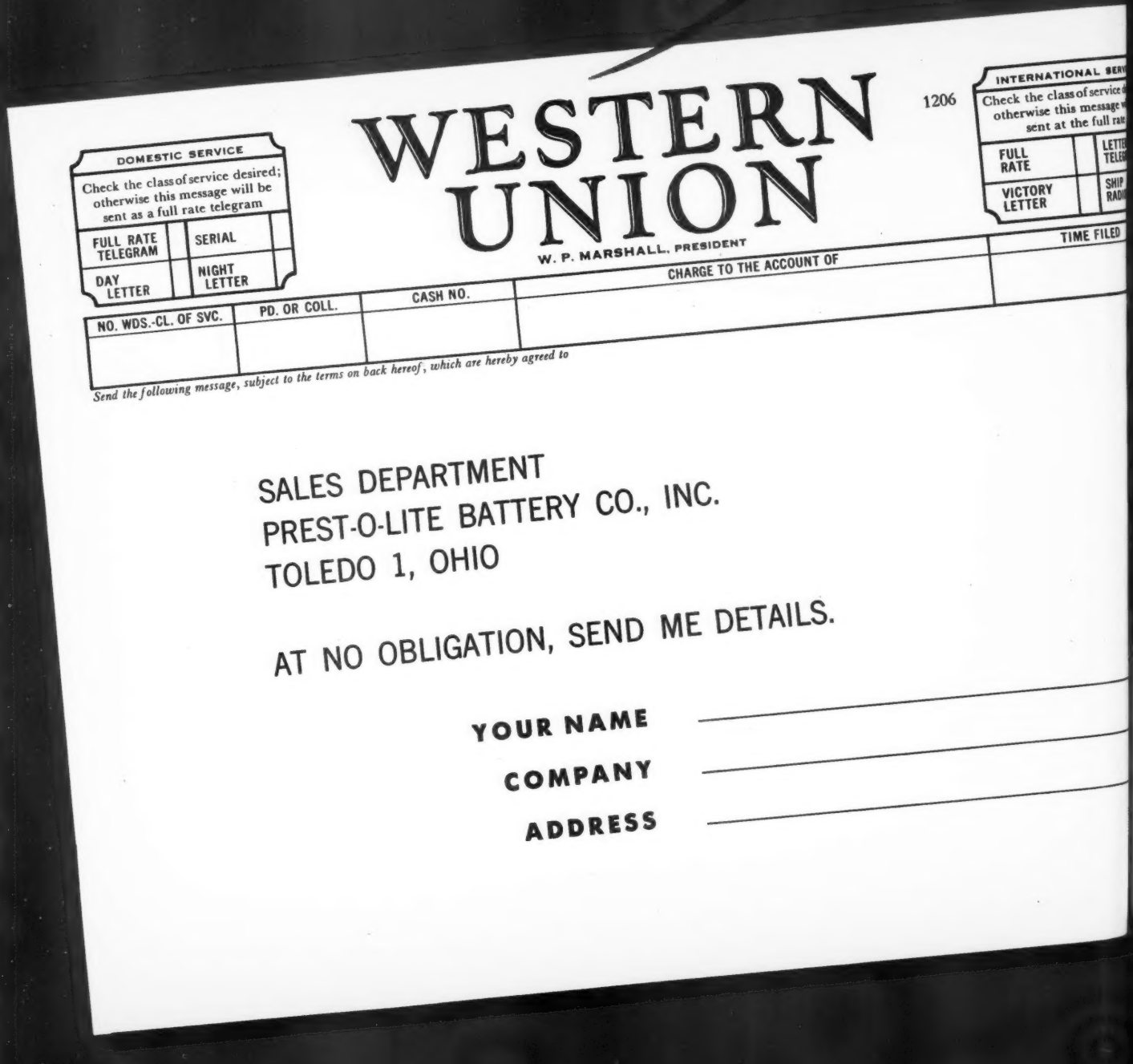
It's so easy to say

"YES"



TURN THE PAGE...

Here's the wire you



WESTERN UNION

1206

W. P. MARSHALL, PRESIDENT

DOMESTIC SERVICE

Check the class of service desired; otherwise this message will be sent as a full rate telegram

FULL RATE TELEGRAM		SERIAL	
DAY LETTER		NIGHT LETTER	

INTERNATIONAL SERV

Check the class of service d otherwise this message w sent at the full rate

FULL RATE		LETTE TELE	
VICTORY LETTER		SHIP RADI	

NO. WDS.-CL. OF SVC.	PD. OR COLL.	CASH NO.	CHARGE TO THE ACCOUNT OF	TIME FILED

Send the following message, subject to the terms on back hereof, which are hereby agreed to

SALES DEPARTMENT
PREST-O-LITE BATTERY CO., INC.
TOLEDO 1, OHIO

AT NO OBLIGATION, SEND ME DETAILS.

YOUR NAME _____

COMPANY _____

ADDRESS _____

usend COLLECT

when you say "YES"

YES ☐ NO ☐

Do you want to make more money in the battery business—by selling more batteries — especially more premium type batteries?

YES ☐ NO ☐

Do you want a protected battery sales territory—sell both jobbers and dealers—do a really big battery job?

YES ☐ NO ☐

Do you want aggressive field sales support by men trained to help you build a big battery sales volume?

YES ☐ NO ☐

Do you want a battery line with dealer and consumer acceptance, backed by proven effective advertising, sales promotion and merchandising?

READ WHY THEY SAY:

"I'm glad I wired Prest-o-lite...!"

It was a Great Day when we answered 'yes'



EDWIN BROWDER JR.



W. KENNETH McROBERTS



J. B. HUTCHINGS



J. C. GREINER

. . . and here's Proof!

MAKING MORE MONEY NOW—

"I've made more money, sold more premium batteries since I've handled Prest-O-Lite Hi-Level."

BROWDER-KIRTLAND SALES CO.
MIAMI 38, FLORIDA
Edwin Browder Jr.
OWNER

DOUBLED BATTERY VOLUME—

"Aggressive field sales support by trained men has netted me more sales and profit than ever before."

KING HARDWARE COMPANY
ATLANTA, GEORGIA
J. C. Hutchings
ASSISTANT V. PRESIDENT

DOING A REALLY BIG BATTERY JOB—

"Prest-O-Lite Hi-Level sales have really climbed with my protected battery sales territory."

McROBERTS SUPPLY COMPANY
CHARLESTON, W. VIRGINIA
W Kenneth McRoberts
PRESIDENT

MOST HELP EVER RECEIVED—

"The Prest-O-Lite advertising, sales promotion and merchandising has really put me in the battery big-time."

GREINER AUTO PARTS CO., INC.
NEW ORLEANS, LOUISIANA
J. C. Greiner
PRESIDENT

Join this enthusiastic group . . .
Sell more batteries — make MORE MONEY!

Turn back a page and send the collect wire

NOW!



Another Big Repair Shop Chooses MET-L-IT For GUARANTEED PERMANENT ADHESION!

THE PHILADELPHIA TRANSPORTATION CO. CUTS BODY REPAIR COSTS WITH WHIZ MET-L-IT®!





BEFORE: Here Met-L-it has been used to fill dents in the side panel of a PTC trolley car. The panel is now ready to be sanded and painted. Met-L-it makes tremendous savings for PTC on such repairs because it does not need heat and does not require the removal of inside wiring or upholstery.



AFTER: The same panel after painting, showing the first class repair work that can be done with Met-L-it.

Lower time and material costs mean more profit for you—read this page and see how the Philadelphia Transportation Company keeps repair costs down by using WHIZ Met-L-it on a steady flow of bus and trolley repair jobs.

Met-L-it gives you combined advantages that no one metal—hot or cold—has ever offered you before. Met-L-it is tough, practical, dependable! Try Met-L-it in your shop—it's as good as gold to you!

CHECK THESE ADVANTAGES!

1. **Guaranteed Permanent Adhesion**
2. **High workability—Perfect Feather-edging**
3. **Takes All Paints—No Checking**
4. **Needs No Heat—Saves Time**
5. **Waterproof, Rustproof, Lightweight**
6. **Can Be Spread, Brushed or Sprayed On**



Ask your jobber for WHIZ Met-L-it. If he cannot supply you, ask him to stock Met-L-it for you.

Whiz®

R. M. HOLLINGSHEAD CORPORATION
LEADER IN MAINTENANCE CHEMICALS
Camden 2, N. J. • Canadian Offices: Toronto • Warehouses: Chicago, Dallas, San Francisco

SERVICED BY YOUR JOBBER

Member of M.E.M.A., N.S.P.A. and A.E.R.A.

JULY PUROLATOR'S FILTER-CHECK MONTH!

Nation-wide ALL THROUGH JULY



Gentlemen, here's another great Purolator *Exclusive!* . . . The promotion of a lifetime . . . A simple, easy plan . . . tested, proved . . . sure to bring in sales—with profits.

The Drive Starts with Purolator Advertising. Late this month and early July, more than 57,000,000 readers of *Saturday Evening Post*, *Life* and *Collier's* will see and read all about FILTER-CHECK Month . . .

The Drive Follows Through with Dealer Displays. Throughout the month streamers and posters will remind motorists for you that the time for a Filter-Check is *NOW;* that the place is *HERE!*

That's all there is to it! Except—everyone out in front will say to motorists, "This is FILTER-CHECK MONTH. Let us check your oil filter." This will take only a moment—pay off *BIG.* In fact, according to a recent, nation-wide test 9 out of 10 motorists say "yes"—buy refills when asked.

Tie IN . . . Cash IN! Filter-Check Month works 2 ways: (1) a dirty refill means the sale of a clean refill—*with a profit;* (2) every time a refill is changed a quart of oil has to be added—*with another profit.*

PUROLATOR
MICRONIC OIL FILTER
"FIRST IN THE FIELD OF FILTERING"

PUROLATOR PRODUCTS, INC.
Rahway, New Jersey and Toronto, Ontario, Canada



They brought Paris to the oil fields

A wonderful new fashion show was held in Paris . . .

One week later, the same show was staged—in Texas!

The place was Neiman-Marcus of Dallas, one of the most remarkable stores in the world. Though hundreds of miles from the "fashion capitals," they sell more exclusives from more top designers than any other store in the U. S.

After new Paris creations arrive in New York, it's only a matter of hours before they're displayed in the N-M salons!

Want to know their secret?

When Neiman-Marcus want a fashion scoop, they bring their high-fashions in at high altitudes. They use Air Express!

You don't have to be a Texan to want the *fastest* service in the world. Your business doesn't have to be fashions to profit from regular use of Air Express. Here are its unique advantages:

IT'S FASTEST — Air Express gives the fastest, most complete door-to-door pick up and delivery service in all cities and principal towns, *at no extra cost.*

IT'S MORE CONVENIENT—One call to Air Express Division of the Railway Express Agency arranges everything.

IT'S DEPENDABLE — Air Express provides one-carrier responsibility all the way and gets a *receipt upon delivery.*

IT'S PROFITABLE—Air Express expands profit-making opportunities in distribution and merchandising.

For more facts call Air Express Division of Railway Express Agency.

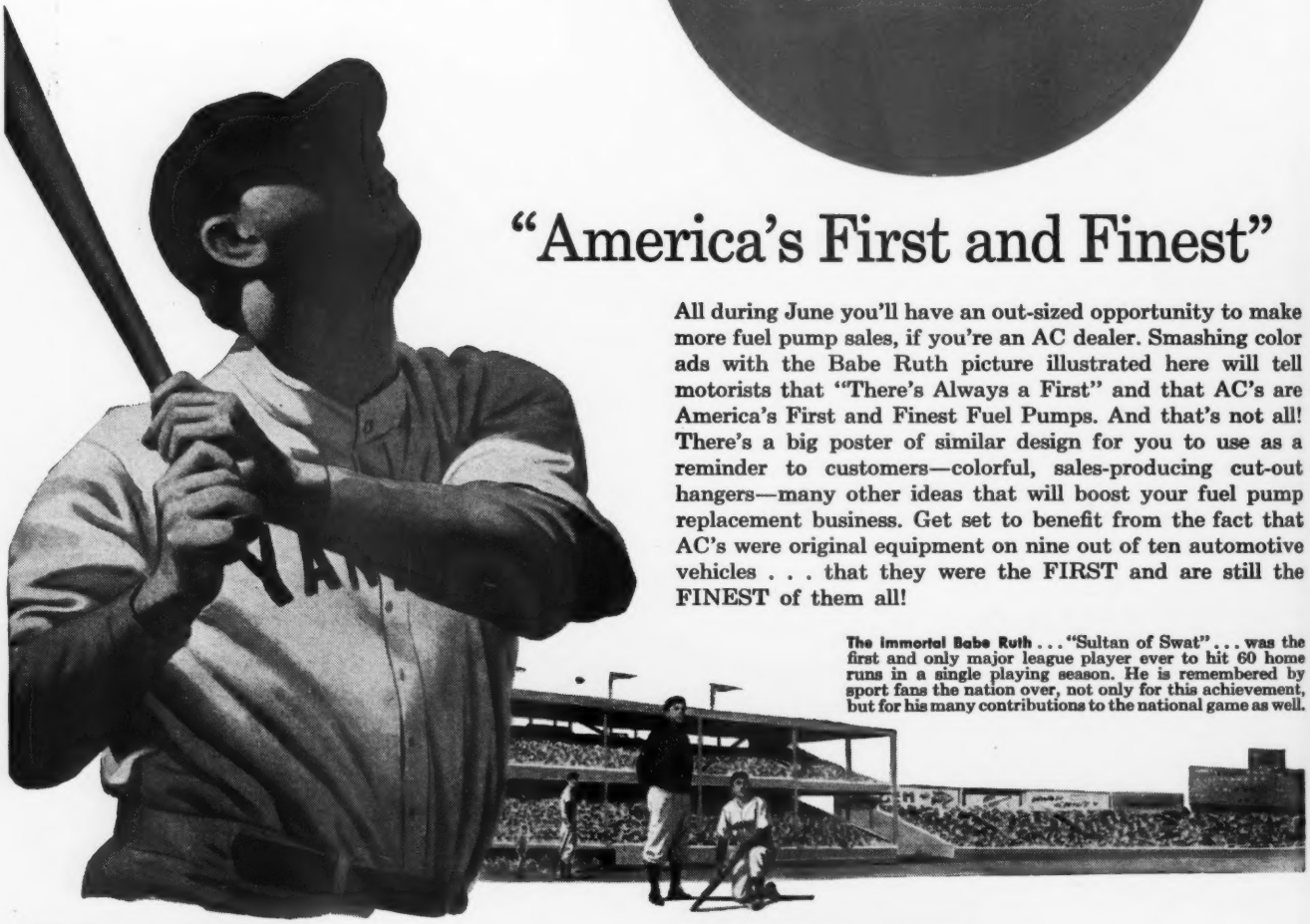


AIR EXPRESS

GETS THERE FIRST

AC FUEL PUMPS

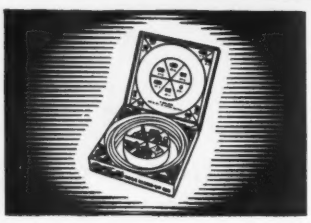
Big June Campaign Sells . . .



"America's First and Finest"

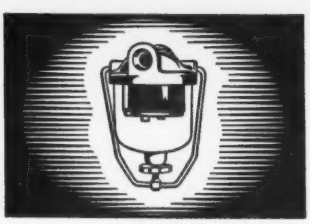
All during June you'll have an out-sized opportunity to make more fuel pump sales, if you're an AC dealer. Smashing color ads with the Babe Ruth picture illustrated here will tell motorists that "There's Always a First" and that AC's are America's First and Finest Fuel Pumps. And that's not all! There's a big poster of similar design for you to use as a reminder to customers—colorful, sales-producing cut-out hangers—many other ideas that will boost your fuel pump replacement business. Get set to benefit from the fact that AC's were original equipment on nine out of ten automotive vehicles . . . that they were the FIRST and are still the FINEST of them all!

The immortal Babe Ruth . . . "Sultan of Swat" . . . was the first and only major league player ever to hit 60 home runs in a single playing season. He is remembered by sport fans the nation over, not only for this achievement, but for his many contributions to the national game as well.



AC FLEXIBLE GAS AND OIL LINES MAKE-UP KIT

Also complete assemblies with Wall Merchandiser that stocks and displays.



AC GASOLINE STRAINERS

Packed in Counter Merchandiser for display and easier sales.

AC OIL FILTERS

Fastest Growing Oil Filter Line

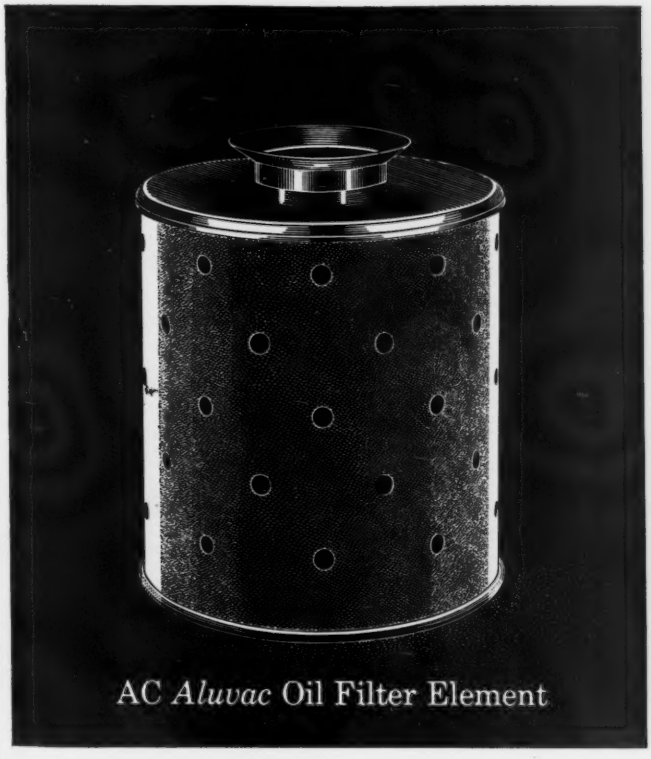
The AC *Aluvac* Oil Filter Element line is the industry's newest and fastest growing line. And for this there's a reason: AC *Aluvac* does a better job. It has 10 times the filtering area of ordinary cotton elements, twice the dirt-catching ability, and nearly twice the life. Buick uses *Aluvac* as standard equipment. Oldsmobile uses it as factory-installed accessory. Chevrolet and Cadillac approve it for field installation. Thousands of owners already know *Aluvac's* benefits. It's another sure AC way for you to make more replacement sales.

AC SPARK PLUGS

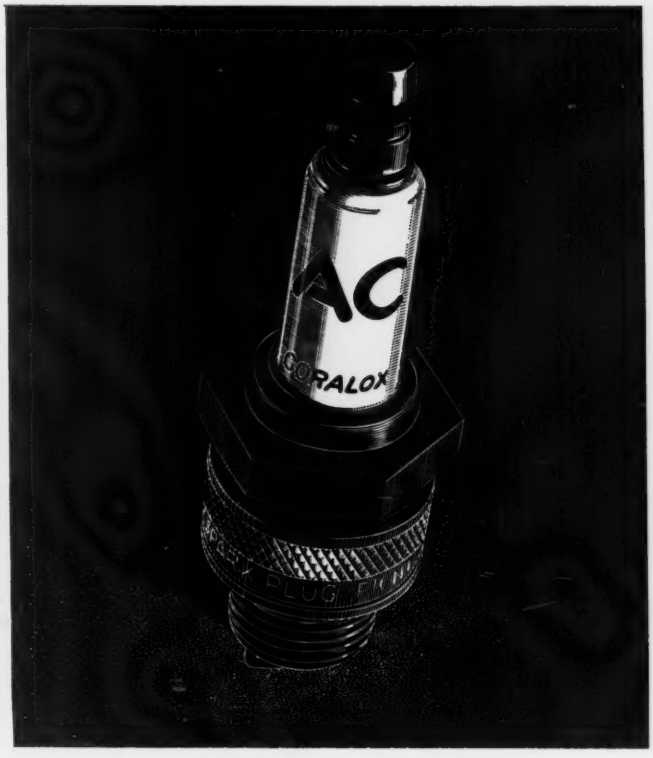
Original Equipment Leadership

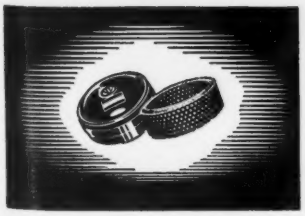
Nearly half of all new automobiles sold today have AC Spark Plugs as original factory equipment. They are modernly engineered for today's fuels and engines with patented *CORALOX* Insulator that better resists heat and oxide coating than old fashioned materials, makes plugs surer firing at every engine temperature. AC's original equipment preference, plus *CORALOX*, mean easier replacement sales.

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION



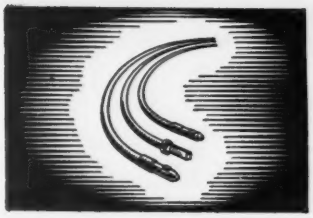
AC *Aluvac* Oil Filter Element





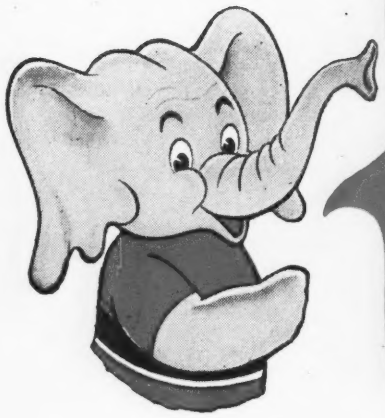
AC AIR CLEANERS AND ELEMENTS

AC Air Cleaners used as equipment by 80% of car manufacturers.



AC SPEEDOMETER CABLE-CASING ASSEMBLIES

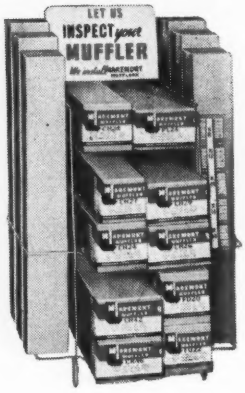
Also tailor-made cables, or bulk cable and casing, with parts.



Look ahead . . . be ahead with MAREMONT

SELL MORE MUFFLERS AND PIPES *with these efficient* STOCKING AND DISPLAY RACKS *by* MAREMONT

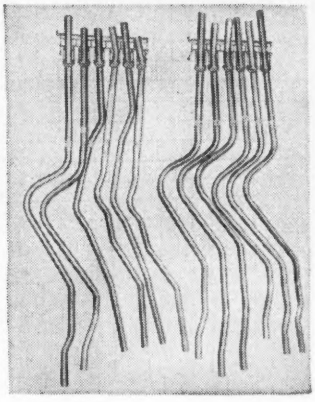
With this compact muffler rack and an "off-the-floor" tail pipe rack, you can really *go places.* The racks save valuable space...give you a closer check on your stocks...help increase sales by keeping both the mufflers and tail pipes prominently displayed. And the removal kit gives you speedier, more profitable installations. Add all this to Maremont's outstanding promotional campaigns as well as high quality and scientific construction. You can readily understand why we say: "Look ahead...be ahead with Maremont!"



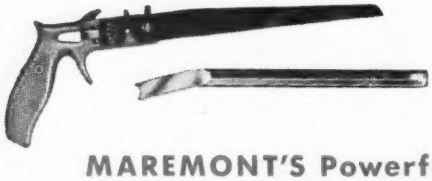
MAREMONT'S Space Saver MUFFLER and TAIL PIPE RACKS

This muffler rack holds 16 most popular mufflers, which cover 75% of your customer requirements. The attractive sign invites muffler inspection.

No valuable floor space is required for tail pipes when you use this wall rack. It stocks 12 pipes, keeps them up, out of the way.



TIME SAVING MUFFLER *REMOVAL KIT*



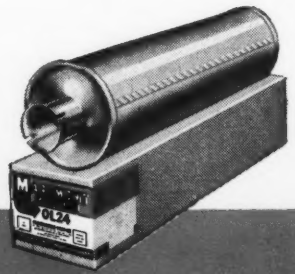
When you speed up installations, you increase profits. That's how this clever removal kit helps... enables you to change any muffler in ½ hour or less.



MAREMONT'S Powerful *NEW* Sales Campaign helps you too. It includes

3-COLOR POSTERS for wall or window	INSIDE STORY give-away BOOK	WINDOW SPOTS
INSPECTION CHARTS	QUICK-QUOTER CATALOGS	MAILING CARDS

For full details, see your nearest Maremont wholesaler, or write the factory.



SINCE 1877

MAREMONT MUFFLERS

ALSO MANUFACTURERS OF MAREMONT SPRINGS AND HELPER SPRINGS

MAREMONT AUTOMOTIVE PRODUCTS, INC., South Ashland at 16th, Chicago 8, Ill.

The right start for a perfect finish... ***the 3M System for Appearance Reconditioning***



Do it right the first time...with the right adhesive!

STOP EXPENSIVE CALL-BACKS by using the right autobody adhesive for every job. These time-wasting do-overs consume the profits of your business—and they are destroyers of customer good-will. The perfect autobody service job is one that's done just *right*—on the first call.

That's why you need 3M *Specialized* Adhesives—each one tailor-made to do a specific job, to do it right the first time.

Working with rubber, metal, glass and fabric, you need carefully compounded adhesives that bond to the surface, stay on the job. There is no "all-purpose" material that can meet all the requirements of today's body shop . . . there IS a "3M" SPECIALIZED ADHESIVE for every material, every kind of work!

Don't take a chance! Use the complete line of 3M *Specialized* Adhesives . . . the same adhesives as those used on the automotive production lines.

Do better work in less time . . . . with these 3M Specialized Adhesives

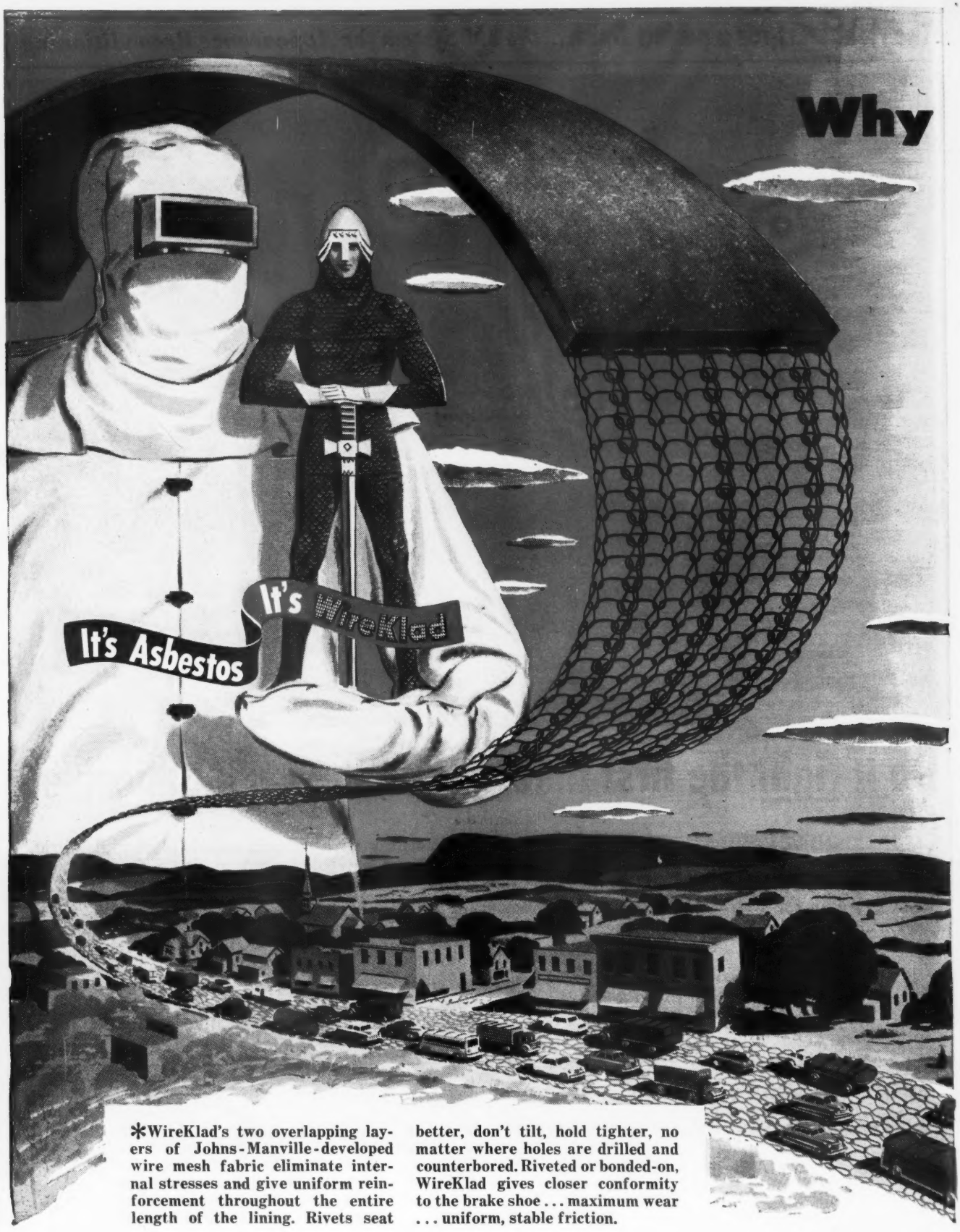
"3M" Weatherstrip Adhesive • "3M" Autobody Sealer • "3M" Body Caulking • "3M" Clear Auto Glass Sealer • "3M" Trim Cement • "3M" Felt Pad Adhesive • "3M" Autobody Deadener • "3M" Convertible Top Sealer • "Underseal" Rubberized Coating.

SAVE MANPOWER WITH

3M ABRASIVES
3M ADHESIVES
"SCOTCH" BRAND MASKING TAPE

3M® BRAND COMPANY PRODUCTS

Made in U.S.A. by MINNESOTA MINING & MFG. CO., St. Paul 6, Minn., also makers of "Scotch" Brand Pressure-sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-Slip Surfacing, "3M" Abrasives.
General Export: Minnesota Mining & Mfg. Co., International Division, 270 Park Avenue, New York 17, N. Y.



*WireKlad's two overlapping layers of Johns-Manville-developed wire mesh fabric eliminate internal stresses and give uniform reinforcement throughout the entire length of the lining. Rivets seat better, don't tilt, hold tighter, no matter where holes are drilled and counterbored. Riveted or bonded-on, WireKlad gives closer conformity to the brake shoe . . . maximum wear . . . uniform, stable friction.

JM **Johns-Manville** *asbestos*

did Johns-Manville make an *asbestos brake lining* like this?*..

The development of WireKlad is an excellent example of what you can continue to expect from Johns-Manville's extensive research facilities, and its leadership through more than 90 years' experience as the world's largest manufacturer of asbestos products.

WIREKLAD—with its revolutionary new wire-reinforcement—takes a rightful place among other renowned developments pioneered by Johns-Manville . . . such as the *first* molded brake lining . . . the *first* precision resin-bonded clutch facing . . . the *first* asbestos-metallic brake block.

As with these, and many other famous Johns-Manville "Firsts" which date back to the early days of the automobile, WireKlad marks another outstanding contribution to the automotive field.

Jobbers and dealers across the country have found that there is a Johns-Manville friction material to meet every requirement of the automotive trade for brake and clutch friction products that help build volume sales and satisfied customers.

Throughout the complete Johns-Manville Line of Friction Materials whether it be Four Star Sets that are custom-made for each car, Fleet Tested Sets for taxicabs and commercial vehicles, Molded Brake Blocks for heavy duty use on trucks and buses, or WireKlad . . . J-M Friction Materials are recognized and accepted as the standard of safety and performance.



—And now Johns-Manville offers a complete BRAKE SHOE EXCHANGE SERVICE with depots strategically located throughout the country

The new, expanded Johns-Manville Brake Shoe Exchange service offers an even greater opportunity to jobbers and their dealers to build new sales outlets and greater profits! Providing a ready source of completely reconditioned and relined brake shoes, dealers can now offer fast efficient service without carrying large inventories.

Under this program you are always sure of the best materials applied by skilled mechanics under careful inspection and ideal factory conditions. This new Johns-Manville service is fast, economical . . . insures a better job for both riveted-on and bonded-on linings.

—Johns-Manville supports your selling efforts with intensive nation-wide customer promotion to your customers . . . week after week!

In times like these the dependability of your sources of supply is more important than ever. It will pay you to understand the many advantages the Johns-Manville Franchise has to offer. Write today for full details. Address: Johns-Manville, Box 290, New York 16, New York.

J-M 4-Star Sets

"Custom made" for all popular passenger cars. Proved in the laboratory and on the road. Balanced friction to match action and drum material . . . for safer, smoother stops.

J-M Clutch Facings

A complete line of smooth-acting, long-wearing facings for every type of service . . . precision-molded resin-bonded J-M STM Facings; "cushion"-action J-M Spiral Wound Facings; hard, dense J-M Molded Facings.

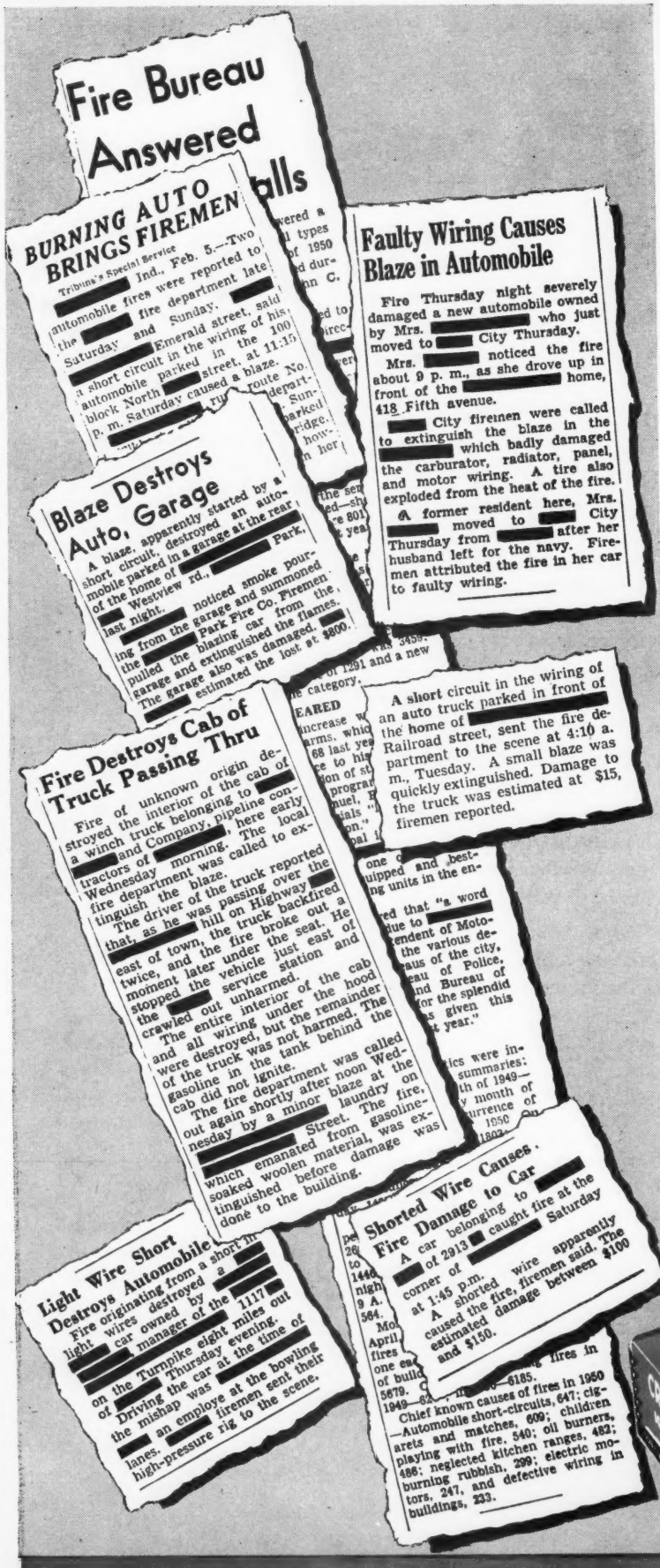
J-M Fleet Tested

For medium and light commercial vehicles. "Fleet tested" in actual service on many of the nation's busiest fleets . . . your guarantee of top performance.

J-M Brake Blocks

Exceptionally high heat-resistance, *built-in*. Available for high, medium, or low friction service. Molded to fit standard brake shoes.

FRICTION MATERIALS



Neglected Wires *do cause* FIRES

. . . lots of them!

Every day, hundreds of papers all over the country headline fires that destroyed cars, trucks, or buses *because of defective wires!*

The Fire Report for the City of Philadelphia shows that the "chief known cause of fires in 1950" was automobile short circuits.

When you finance a car, you can't drive it away until it has been protected by fire insurance!

Defective wires are the worst fire hazard in motor vehicles. So, check the wire on *every* job! Replace dangerous wiring with genuine Crescent Wiry Joe ignition wires and battery cables. They eliminate fire hazards . . . improve engine performance in the bargain.



THE CRESCENT COMPANY, INC., Pawtucket, R. I.

Check the wire and cable on every car!



Want some mighty pleased customers and extra dollars in your pocket? Sell Moraine gasoline filters! All-metal except for a sealed-in gasket, Moraine filters remove dirt, water, lint and scale . . . stop carburetor clogging . . . stop stalling. Not only that, Moraine filters are unbreakable, easy to install and easy to service. Order a supply from your United Motors distributor today.

UNITED SERVICE MOTORS

A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

MORAINE PRODUCTS

DIVISION OF GENERAL MOTORS CORPORATION, DAYTON, OHIO



MORAINE ENGINE BEARINGS

For satisfied customers, sell Moraine engine bearings. They're quality made . . . durable . . . and they're original equipment on G.M. cars and trucks; plus most other popular makes. Available through United Motors distributors.

DELCO BRAKE FLUID

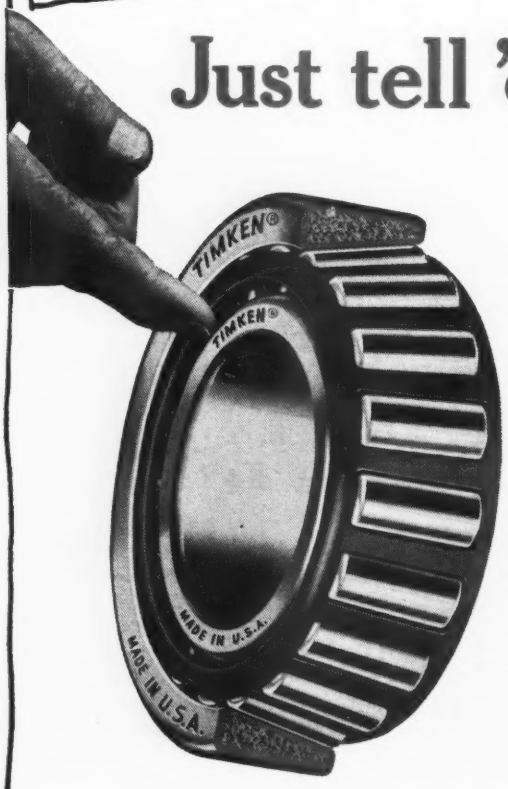
Sell the brake fluid that exceeds S.A.E. standards for quality and safety—Delco! Order Delco Super 11 heavy-duty and Super 9 Universal brake fluids from United Motors Distributors. Super 9 now available in new handy 8 oz. bottles.

How to get more customers in your corner

A good way to keep customers on your side is to let them know you use only the best replacement parts. So when you install a new tapered roller bearing, make sure you tell them it's a Timken® bearing—the bearing whose quality your customers recognize.



Just tell 'em it's "TIMKEN®"



Automobile manufacturers rate Timken bearings number one choice for original equipment. That's because Timken bearings have the most advanced design, are made of Timken fine alloy steel, are manufactured to extreme limits of precision. And the Timken Company's *complete* control—from melting steel to final bearing inspection—insures the finest quality.

When you replace a tapered bearing make sure you use *only* Timken bearings. And point out the trademark "Timken" to your customers. It's America's best-known, most-respected name in bearings. FREE BOOKLET! Send today for "Timken Tapered Roller Bearings, Their Care and Maintenance". Write Dept. AM-6, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN *TAPERED ROLLER BEARINGS*

TRADE-MARK REG. U. S. PAT. OFF.

NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◫ AND THRUST →◫← LOADS OR ANY COMBINATION ✳

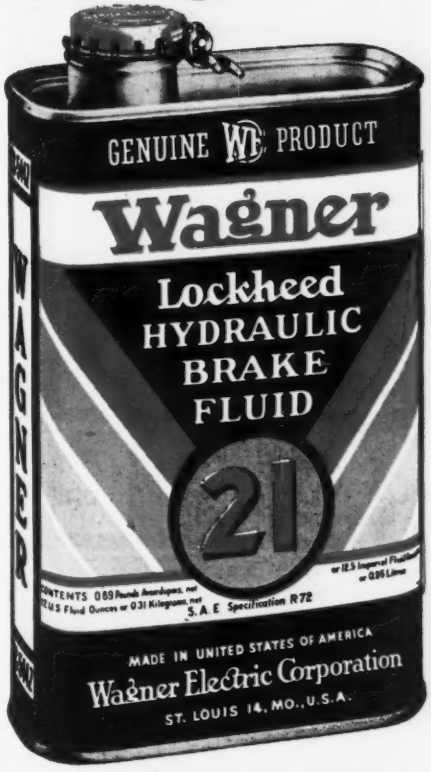
For All Seasons

WAGNER LOCKHEED BRAKE FLUID

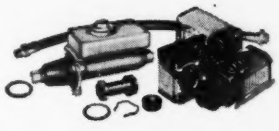
functions under all driving temperatures

You can't beat Wagner Lockheed Hydraulic Brake Fluid for dependable performance under all operating conditions . . . in all seasons. It mixes with any other approved type of fluid your customer may have in his brake system. Wagner fluid maintains its chemical characteristics and lubricates the brake system over the operating range of temperatures. It forms no gummy residue and will not harm metal or rubber parts. Surpasses S. A. E. standards.

You can depend on Wagner quality because Wagner products are used as original equipment by automobile, truck and trailer manufacturers. See your nearest Wagner Jobber, or write us for details. Ask for Bulletin HU-17H on "Hydraulic Brake Service."



...and all from ONE source..... your Wagner jobber....



WAGNER LOCKHEED HYDRAULIC BRAKE PARTS—*a complete* line, covering *all* makes of cars and trucks, including seldom used, slow-moving parts not easily obtainable elsewhere.



WAGNER CoMaX BRAKE LINING—*offers complete coverage for all your needs* . . . in sets, rolls, blocks, slabs and cut segments. A non-compressible, long-wearing lining of uniform texture.

Wagner Electric Corporation

6498 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.

(Branches in Principal Cities and in Canada)

HEI-10A

Wagner ...the best known name in brake service



LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoKoL • CoMaX BRAKE LINING • AIR BRAKES
TACHOGRAPHS • ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL CRANE BRIDGE BRAKES

AMERICA'S *LARGEST* AND *FINEST* LOW-PRICED CAR!



you're First with

CHEVROLET



ADVANCE-DESIGN TRUCKS—FIRST IN DEMAND—VALUE—SALES!

America's finest franchise!

CHEVROLET MOTOR DIVISION, *General Motors Corporation*, DETROIT 2, MICHIGAN

Question: Can you increase your lubrication volume $27,421 in two years time?

Answer: The Fermans DID!



● In just two years, their lubrication volume soared from $22,224 to $49,645 . . . a record in any book! Analyzing such a phenomenal rise, this Tampa, Florida Chevrolet Dealer gives credit to their new Alemite Lubrication Department and to Alemite's famous 30,000 Mile Guarantee. Begun in 1947, this forceful combination resulted in an increase of $11,905 the first year . . . a whopping $15,516 the next . . . still shows no signs of stopping!

THE ALEMITE "MAGNET PLAN" will show you how!

● Thorough! Complete! Effective! Alemite "Magnet Plan" features are *proven* business getters—and keepers! Fully tested by Alemite—the oldest, most reliable name in lubrication—they bring you the "result-getting" ideas and services that attract more new customers . . . produce more business throughout the year—in *every* department. Get the facts today. Find out first hand how the Alemite "Magnet Plan" operates . . . how it will bring you more profitable service business the year 'round. Call your Alemite Distributor or write Alemite, 1826 Diversey Parkway, Chicago 14, Ill.

Check these...

Alemite "Magnet-Plan" Services Only Alemite Gives You All 11— Fully Tested, Fully Proved!

1. Counsel and concrete assistance from one of the 300 Alemite Service Promotion Specialists.
2. Powerful Alemite National Advertising—year after year—pre-selling lubrication prospects for you.
3. "Business Expander" follow-up systems.
4. "Prescribed Lubrication" program.
5. Sales-building seasonal campaigns.
6. "Gusher Plan"... to build motor oil sales at the service bay.
7. "Sales and Service Security Plan" including the 30,000-mile guarantee for new and used cars and trucks up to 1 ton.
8. Monthly Analysis Sheets, to prove increased service sales.

Alemite Equipment for—

9. Specialized Lubrication Service.
10. Electronic Wheel Balancing Service.
11. Underbody Coating Service.

Alemite "Business Expander" Follow-Up System

This "fool-proof" system of customer record and follow-up is the fastest, most visual, easiest-to-operate method ever devised. The names and status of hundreds of customers can be seen at a glance. Posting time is reduced to a new low. New, exclusive feature eliminates need for personally addressing follow-up post cards each month. Ask your Alemite salesman today!



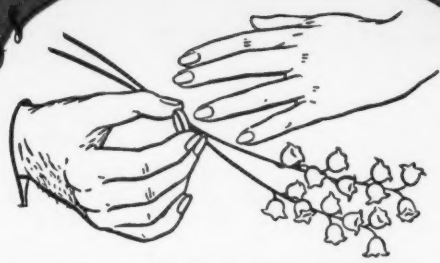
Another Product of STEWART WARNER

ALEMITE

REG U S PAT OFF

The Oldest, Most Reliable Name in Lubrication





"WITH THIS RING . . ."
repairmen hold customers for life!

Sealed Power
MD-50 STEEL OIL RING

The only ring with the FULL-FLOW SPRING

Controls oil even in badly tapered and out-of-round bores



Sealed Power
CHROME-FACED RING

For Triple Mileage
Latest scientific development to fight
ABRASION, FRICTION, CORROSION, HEAT

GET IT FROM YOUR JOBBER

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW CARS! BEST IN OLD CARS!

MOTOR AGE

June • 1951



The original painting for our May cover was requested by Wilbur Shaw and presented to him by Jack Montgomery while Jack was covering the Indianapolis 500.

newscoop . .

Trained Mechanics Already A Grave National Problem

Reports coming into Washington from state offices of the government's employment services indicate that the shortage of trained automobile mechanics is growing slowly but surely. So far, the growing skilled and professional labor shortages are greatest in the fields of mechanical and electrical engineering. But with the growing defense program now really getting under way more and more skilled mechanics and repairmen are being attracted to other fields.

Clamor Against Regulation W Grows as Sales Fall

Although passenger car companies are fighting cuts in materials, there is serious doubt that the industry could continue at the record first-half pace even if materials were available, because the market probably would not absorb the more than six million cars that would be produced. Stocks were backing-up in dealers hands during April and May causing Kaiser-Frazer to reduce its production by one-half and Hudson to close down for three weeks following a succession of schedule reductions. The clamor against Credit Regulation W is growing, with manufacturers joining new and used car dealers in opposing it.

Improved Hydra-Matic Will Have Additional Gear Range

Information on the improved Hydra-Matic transmission developed by Detroit Transmission Div. of GM, reveals that it will have an additional gear range especially adapted for traffic driving and also for operation in hill country. Through improvements in valving, the transmission is much smoother in operation than previous designs, and also is said to give better fuel economy. It will be introduced on at least one GM line in 1952.

Replacement Parts Makers Present Their Problems to OPS

If manufacturers of automotive replacement parts must have price controls, they want an order specially tailored to cover them. This was made plain last month to the Office of Price Stabilization at a meeting between government officials and the industry's advisory committee. There are several basic reasons for this demand. In the first place, problems of repair shops and other users of replacement parts are vastly different from those of buyers of parts for new car assembly. For example, there is no method or pattern, obviously, for re-runs—parts which were once made in volume but which now have limited demand for various reasons. Another factor is the high premiums which must be paid for conversion steel, a prime source of raw materials for parts manufacture and therefore a significant factor in pricing.

Government Clarifies Tire Inventory Order for All

NPA has cleared up the meaning of of its tire inventory order. The present 30-day limits on stocks apply at all levels of distribution. This means that garages, filling stations, and other retailers can keep only this amount on hand.

Lincoln-Mercury Dealerships Will Register All Mechanics

Lincoln-Mercury has instituted a service program under which mechanics in LM dealerships will be registered with the home office in Detroit. Each mechanic will be assigned a registration number which will be embossed on a rubber stamp which he will use on a seal placed on each car he repairs. Registered mechanics will receive an identification card and certificate and a continuous record of his training and qualifications will be maintained at Detroit. Technical information and short training and refresher courses will be made available to registered mechanics periodically.

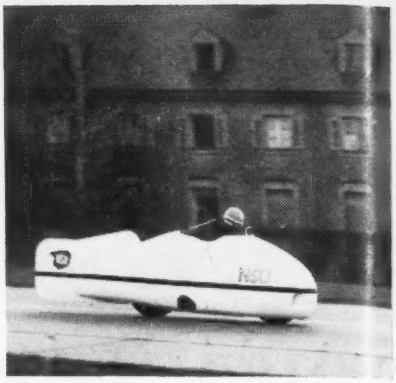
PATA Helps in Bicycle Safety Campaign

The Philadelphia Automobile Trade Association has been cooperating with the Highway Traffic Board and the Bicycle Safety Campaign, which was launched on May 18th. The aim of the program is to equip 10,000 bicycles with Scotch-Lite Tape, which will reflect artificial light. On June 16th, PATA will provide Scotch-Lite Tape and registration centers throughout Philadelphia. At car dealerships Boy Scouts will man the safety centers and apply the tape to all bicycles brought in.



Livable Longie . . .

Former race driver Ted Nyquist of Reading, Penna., sits at the piano while Mrs. Nyquist prepared lunch in the kitchen of the longest trailer on the market, 50 ft. overall. The coach was recently exhibited at the National Trailer Coach Show.



World Record Maker

This specially constructed German motorcycle recently dashed down the Super Highway from Munich to Nuremberg at the record smashing speed of 180 mph. The former world's speed record, set in 1937, was 173.5 mph. The driver, Wilhelm Hertz, is almost literally encased in a streamlined shell.

North Carolina Dealers Hold Annual Convention

At the 16th annual convention of North Carolina Automobile Dealers Association held recently at Pinehurst, the following officers were elected: president, Jack Steele of Raleigh; vice-president F. H. Deaton of Statesville; secretary, W. H. Stevens of Winston-Salem; treasurer, E. Westbrook of Durham. Steele succeeds T. A. Williams of Greensboro, retiring president. The association adopted resolutions urging the next session of the State Legislature to enact a workable automobile mechanical inspection law to replace one repealed in 1949.

Toll Roads Grow in Favor Brookings Report Shows

A Brookings Institute report indicates that toll roads are growing in favor. Because of growing difficulties in financing highway work and expansion, more than half the states are turning to studies of toll collections. In addition to the scheduled completion of the second extension of the Pennsylvania Turnpike late this year, several similar projects are under way. There are certain obstacles to such systems, the Brookings report finds. For one thing, such roads cannot apply to city mileage nor to rural highway systems. And free roads must be maintained parallel to toll arteries, for the most part.

New Car Use Survey Released by AMA

AMA is just now publishing results of a nationwide survey made in January and February of this year on car use in the U. S. Conducted by a national research organization, the survey covered 700 localities in 36 states. The findings will be used in an intensive campaign to demonstrate to government officials and the public at large the essential nature of the automobile in today's economy. On the basis of distribution of trips made by passenger cars for various purposes the following conclusions were reached:

1. Each day 59 million, or 54 per cent of all adults in this country ride in cars.
2. On an average day in car-owning households, 50 million adults use passenger cars.
3. Nine million persons from non car-owning households depend on passenger cars every day.
4. Of all employed adults, 27.5 million, or 46 per cent, use passenger cars for earning a living.
5. Of those using cars to drive to work, 79 per cent do so five times a week or more.
6. Of all passenger cars used, 56 per cent is connected with making a living and/or shopping.
7. All occupational groups depend on passenger cars for earning a living.
8. Of all car use by men, 55 per cent is in connection with earning a living. For women the figure is 24 per cent.
9. Car use by women for shopping is 28 per cent and by men 15 per cent.
10. Cars bought on time payments show a higher percentage of use for livelihood purposes than those purchased for cash.

Price Controls Cut Chrysler Earnings

Chrysler Corporation has listed price controls as the principal reason for a sharp dip in its 1951 first quarter earnings. For the three months' period, net profit was $13.3 million or 2.3 per cent of sales of $626.2 million, the fourth highest volume in Chrysler's history. In 1949 the company earned $18.7 million on a sales volume of $401.2 million, or $5.4 million more on a sales volume less than two-thirds that of the first quarter of this year. Comparison between the first quarter of 1951 and 1950 is not valid, since Chrysler was on strike a year ago. For all of last year, however, the company earned 5.84 per cent of sales, indicating the drop to 2.3 per cent has been influenced by price controls which have not reflected increased costs of labor and materials.



Skim-Boaters Skimming . . .

This new motorized aquaplane takes water sports enthusiasts over the surface at from 25 to 40 mph. The unique vehicle weighs 120 pounds and is made in sections which will fit in the trunk of any ordinary car. It is powered by a 7½ hp outboard motor, and a tractor type propellor in the forward section. It is steered by a combination of weight shifting and using a tiller rope. The skim-boaters here are enjoying their sport at Cypress Gardens, Florida.

AAA Race Drivers to Receive Lifetime Coverage

For the first time in auto racing history, drivers, mechanics, and officials will be insured under a plan which will pay $25.00 a week with no time limit to those permanently injured. The AAA contest board stated that the increased premium coverage will be 25 percent of the present premium of the owner and the driver and on the part of the promoter 25 percent for the number of cars which actually participate in the race. All promoters have agreed to cooperate. At the conclusion of the 10 week disability period, for which payments of $40 a week are made, $25.00 payments will start.

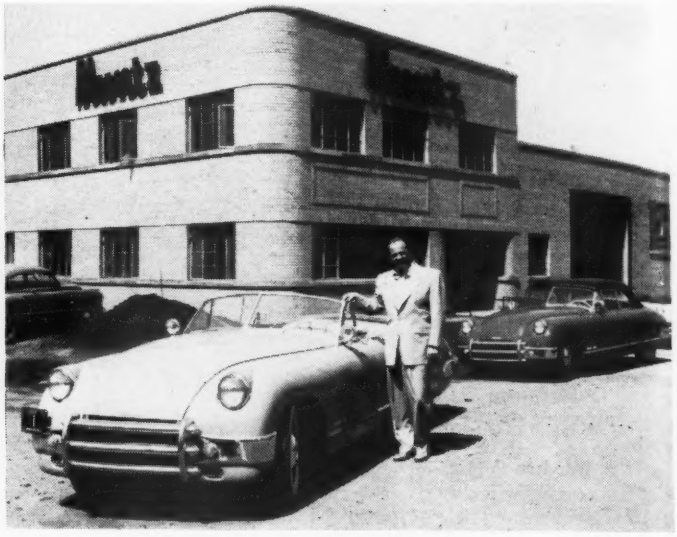
Chevrolet Aims for Top In Automatic Drives

Chevrolet is rapidly forging to the front as the largest manufacturer of automatic transmissions. May, Chevrolet completed its first one-half million automatic drives, approximately 17½ months after it started production in December, 1949. Buick, still the largest producer of automatic transmissions for one make of car, completed its 500,000th Dynaflow unit in May, 1950, about 28 months after the start of production. Since last October, however, Chevrolet has built 300,000 Powerglide transmissions in seven months and 12 days, which would be at an annual rate of nearly 475,000. Currently, nearly 40 per cent of Chevrolet production is equipped with the Powerglide unit. For the lower price field generally, about one-fourth of total production of all cars offering automatic drives are equipped with such devices.

newscene



▲ On the first "Mechanical Snowball" Sylvia Stewart proves her skill on the slopes of Sun Valley. The 400-pound aluminum vehicle, consisting of two five-foot hemi-spherical wheels, is fun on the snow to the non-skier.



▲ This new U. S. sports car can go from a dead stop to 80 mph in 9 seconds. Powered with Lincoln engine and hydramatic, the "Muntz Jet" costs $5,500.



◀ In Bienne, Switzerland, they have mirrors attached to the directional posts on the corners of streets. This mirror gives the driver a view around blind corners.

▼ A house trailer manufacturer, William McDonald, Jr., lets Francis Sadrowski watch the television set installed in his 1951 Cadillac. The antenna, mounted on the trunk, is operated by an electric motor for directional beaming.



▼ When General MacArthur visited his home-town, Sheriff Herman Kubliak (in topcoat) got a chance to display his confidence in the officers of Milwaukee's City Police and County Sheriff's department.



. . . Report to Our Readers



Family Affair

The cover on the June issue of MOTOR AGE is a family affair. Back in June, 1949, we saw this happy couple standing before the preacher





pronouncing their marriage vows. To be sure, the blonde bride had a hammer in her hand, possibly to emphasize her intent.

The hammer has played an important part for our June couple, for in June last year, Junior had arrived and had laid hold of the same family sledge and proceeded to damage some of mama's precious silver.

June, 1951, finds Junior still in a breaking-up mood. This time he has turned the tables and has proceeded to lay waste to father's trusty compression gage.

★ ★ ★ ★

Lesson at Indianapolis

For all the high-class entertainment provided by 33 steady-handed, lead-footed drivers at Indianapolis, the Speedway is probably one of America's greatest proving grounds for fire-testing the future of automotive design.

For example, with new tires in this year's race, speeds were increased and new all-time records established.

In recent years we have seen many developments at Indianapolis tried out. When the Air Forces developed the rubber gas tank, the first adaptation of the tank to the automobile was made in the 1949 Indianapolis Race. The sleekness of the design of the Indianapolis cars can be seen in the present style lines of every modern automobile on the road. Better tires have been tested for endurance, heat and wear. Ninety per cent of the race cars are equipped with new types of suspension and may lead to its future adaptation on passenger cars. Fuel injection was demonstrated at Indianapolis in recent years. Multiple carburetion, spark plugs that stand up in high compression engines, engine valves, pistons and bearings, are among many of the innovations that received their baptism of fire at the Speedway.

★ ★ ★ ★

New Developments Continue

Latest information indicates that the tooling program for the new Dodge V-8 engine has been delayed and that production will not get underway until some time next year. DeSoto, however, is progressing with its V-8 tooling and should be in production with a pilot line within the next two or three months. It also is reported that Chrysler Hydraguide hydraulic power steering will be offered on DeSoto 1952 models. Acceptance of the power steering unit on Chrysler Division cars has exceeded expectations, even at the optional price of $175.

★ ★ ★ ★

Trade Away

It's an old rule—old car dealers never die, they merely trade away. That fairly well describes the used car situation today. With inventories at an all-time high, dealers have been hard put to move merchandise with the strangulation grip of Regulation W holding back normal selling.

Frank P. Tighe

Editor



The Dealers Responsibility in Highway Safety

I HAVE frequently wondered how many new car dealers in this country have ever taken a few moments to think about their particular responsibility in their respective communities to further the activities of highway safety.

The auto dealers of America are the people who provide the vehicles used for business, for pleasure, and for the transportation of the many families in our communities. They come in as customers, we sell them a vehicle, and they in turn drive the vehicle from our place of business on to the streets of our cities and the highways of our state. Should our efforts and interest stop there? Or, should we assume a bit more responsibility for the vehicle and the driver of our particular make of automobile?

It seems to me that after the sale has been made and delivery has been completed, there still exists an excellent opportunity for further selling the automotive business to our community, and I am thinking primarily, not only of the service features that we offer, but the training of the younger adults in our community and of the influence they have on their parents at home.

Many dealers, myself included, are now wholeheartedly behind the Driver Education Programs in the various secondary schools in their communities. The dealer organizations in the State of Michigan have developed what I feel is one of the outstanding dealer activities in the country. Following the recommendations of the President's Highway Safety Conference in 1946, the Michigan Inter-Industry Highway Safety Committee was formed. A group of interested businessmen, meeting in Detroit, laid the ground work for today's Michigan Committee. A similar procedure was also adopted in the other forty-seven states.

However, the Committee thought that the Michigan program, to be most successful, must not only have an organized committee, but also a budget large enough to employ a full time Executive Secretary to carry out the work of



by Jack Rose
DeSoto-Plymouth Dealer, Detroit, Mich.

---

its activities throughout the entire state.

In June of 1949, the Committee employed Leslie Silvernale, a nationally known figure in safety education as its Executive Secretary. Mr. Silvernale filled this position until February of 1950, when he was called upon to direct the School Bus Driver Training program at Michigan State College. He was replaced by Walter Eaton, from the New York State Safety Commission, Albany, New York.

Our Executive Secretary devotes his entire time to the various activities necessary to promote driver education training to the many high schools in the State of Michigan. To make this possible, the members of the Committee, which includes representatives from insurance and automobile agencies and manufacturers, plus the many new car dealers in the State, support the high schools in their communities as well as on a state level, by making materials for Driver Education available without cost to the schools.

The Executive Secretary contacts the various school superintendents and principals and acquaints them with the benefits of a Driver Education program to their students and community and offers the cooperation of the Michigan Committee in making the Driver Training materials available to the schools. Upon acceptance of this program by the school board, one or more of the dealers in the community find available an excellent opportunity to carry out his responsibility to his customers and members of his community by making available a car, or cars, to his local high school. He can further the progress of highway safety by making this very important laboratory presentation to the schools for use in their program.

The dealer leases to the Board of Education, one of his vehicles for use as a Driver Training car. In this car the younger driver is properly instructed and trained to become a safe driver and good citizen in his community. Thus, the dealer is not only serving his function as agent providing vehicles, but also is making it possible for the present and future users of his product to be adequately prepared for the increasingly difficult problems of traffic as it exists today.

The Inter-Industry Committee has extended additional items and incentives to the various communities throughout the State. In the adoption of this program we make available to schools a special edition of "Man and the Motor Car" together with the accompanying instructional aids and tests.

Psycho-physical testing devices which include reaction time, depth perception, visual acuity, peripheral vision and glare resistance, are available at a very nominal cost.

The Committee has consistently encouraged the use of the "Man to Man" and "Dad to Daughter" Agreements to interest the parents of these younger drivers in their proper supervision and to again remind the youthful driver

(*Continued on page* 130)



Chief mechanic, Jean Marcenac getting the cylinders in condition on the Novis Purelube Special.

Lee Wallard says, "*Thanks to my mechanics. If it wasn't for those fellows, my car wouldn't have been able to go the full distance.*"

by Jack Montgomery
Technical Editor

Mechanics Make

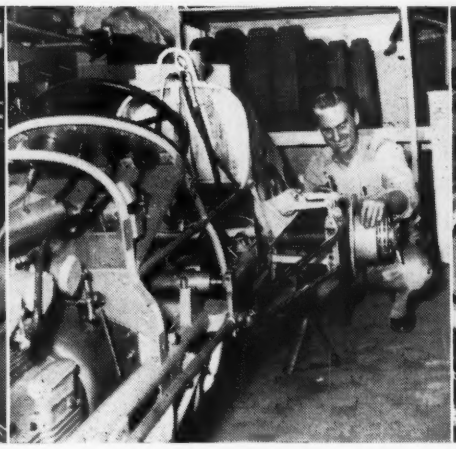
Winners at Indianapolis

ALL records above ten miles toppled in the 1951 running of the Indianapolis 500. All lap records except one, two and four were broken and every one of the remaining mileage records, as Lee Wallard raced around at the phenomenal speed of 126.244 miles per hour. Although most experts had predicted an increase of about two and three miles per hour in average time, the Holland mark of 121.327 was decisively beaten by Wallard, who drove most of the race at better than 130 miles per hour. The chilling pace sent car after car to the pits with mechani-

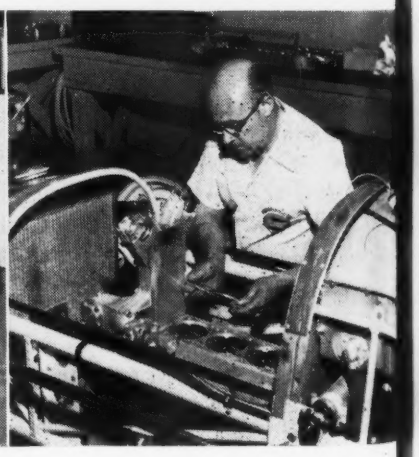
Lou Moore, owner and builder of the Blue Crown Spark Plug Special, looks over his No. 27 car which Duane Carter is driving.



Agajanian's Grant Piston Ring Special—Clay Smith chief mechanic. The car set a new lap record of 138.122 mph.



Wynn's Friction Proofing Special —Harry Stevens chief mechanic. This car is a Kurtis Kraft Chassis with a 270 Offenhouser engine.





Lee Wallard and his winning car, the Belanger Special, a 4-cylinder rear drive with fuel injection.

cal trouble of all sorts. There were no serious injuries although Mauri Rose plunged into the infield and overturned. Rose crawled out and was taken to the hospital but outside of being badly shaken up he had only scratches on one arm.

Lee Wallard in the Belanger car had no serious competition for the last half of the race. His car, a four cylinder rear drive, was equipped with fuel injection. Second place went to rookie

(*Continued on page* 132)

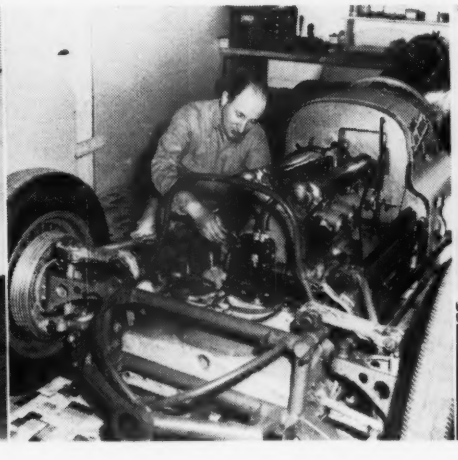
The First 10 Finishers

1. **Lee Wallard, 126.244 MPH, $63,212**
2. **Mike Nazaruk, 125.302 MPH, $21,362**
3. **Jack McGrath and Manuel Ayulo, 124.745 MPH, $14,962**
4. **Andy Linden, Los Angeles, $10,012**
5. **Bobby Ball, Phoenix, Ariz., $8612**
6. **Henry Banks, Compton, Calif., $6962**
7. **Carl Forberg, Detroit, Mich., $5862**
8. **Duane Carter, Detroit, Mich., $5162**
9. **Tony Bettenhausen, Illinois, $4662**
10. **Duke Nalon, Sherman Oaks, Calif., $5062**

John Zinck Special is entered by M. A. Walker shown with the car. He is the owner and mechanic. The car is driven by Cecil Green.

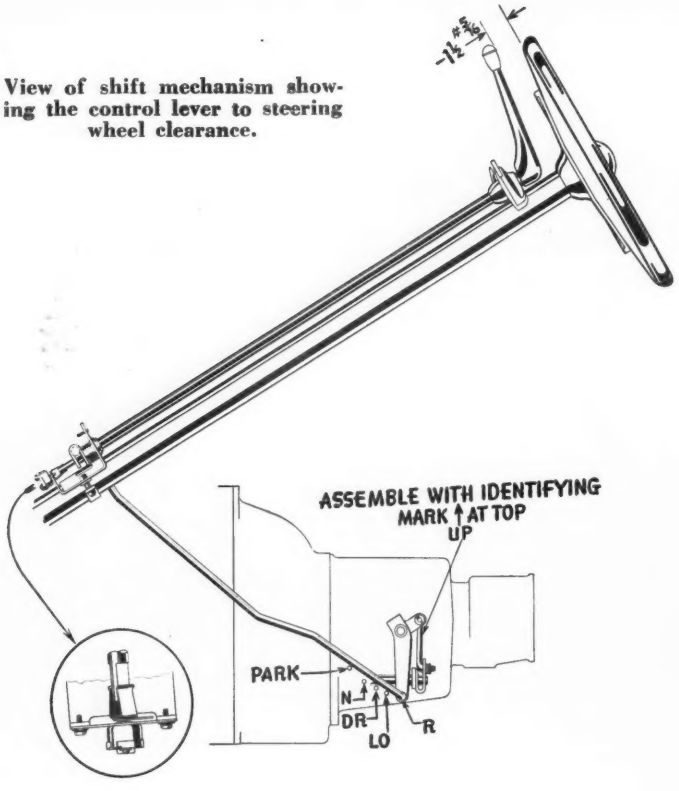


Robbins Special—Frank DelRoy, chief mechanic. This car was bought from Ed Walsh last year after Parsons won with it.

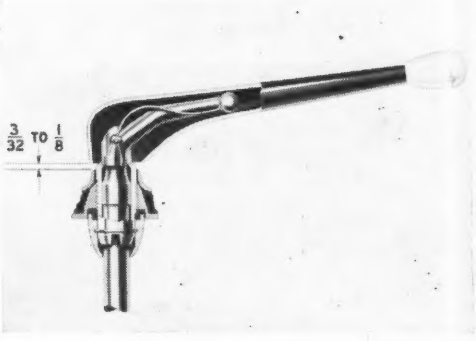


Chief mechanics assembling the engine that was used in Mauri Rose's car a front wheel drive powered with a 270 cu.in. Offie.

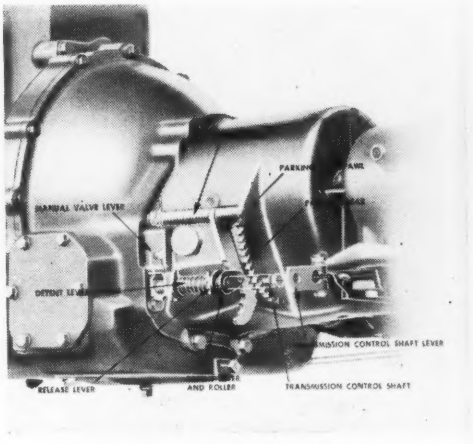




View of shift mechanism showing the control lever to steering wheel clearance.



Steering column support to control lever clearance.



Cut away of the parking lock and controls.

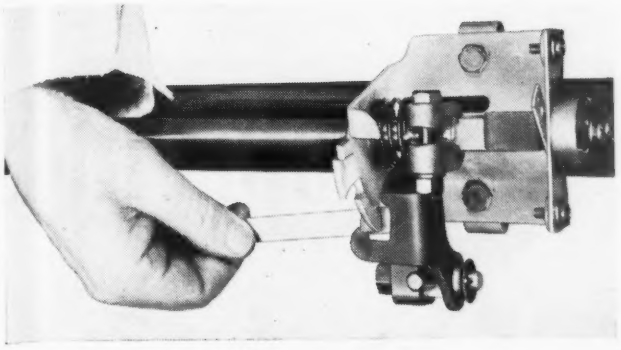
Trouble-Shooting and A

Knowing all of the latest service information on Po

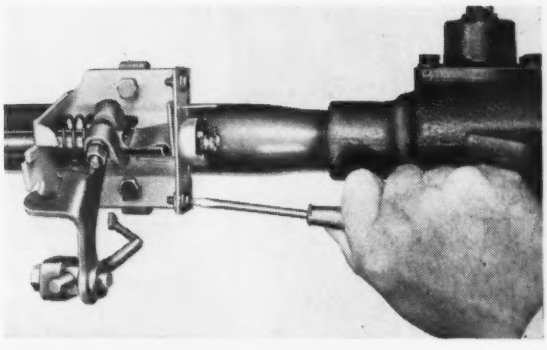
WHEN diagnosing complaints on automatic transmissions, time can be saved by making a routine check on the fluid level and the linkage adjustments first.

Linkage Adjustment:

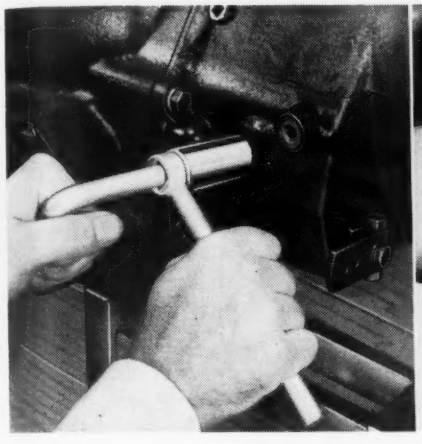
The clearance between the control lever and the upper support cover should be 3/32 to 1/8 inch. To adjust this clearance, remove the screws holding the upper support to mast jacket and the screw to the upper support up or down to gain the necessary clearance. Replace the support screws. Place the gear shift lever in reverse and check the clearance between the control lever and the steering wheel rim, which should be ½ plus or minus 5/16 inch. To adjust, loosen the lower support clamp bolts and move up or down as necessary. With the selector lever in reverse, check clearance between the reverse stop on the control shaft lower support and the lower support. The clearance would be 3/64 inch. To adjust loosen the transmission control rod swivel, make sure the transmission manual valve lever is raised to top detent position and selector lever is in "R" position, move the selector lever as necessary to obtain 8/64 clearance and tighten the swivel.



Checking the reverse stop to lower lever clearance.



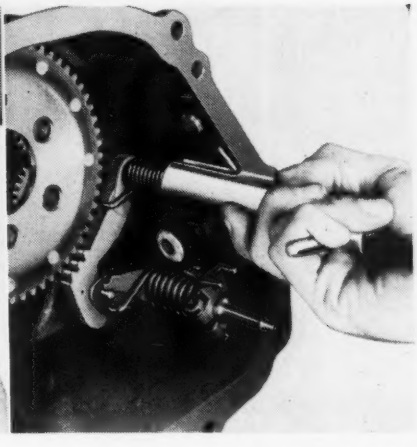
Adjusting the safety switch. The switch is used as a safety device when starting.



Special tools in position for making the Low Servo adjustment.



Checking clearance between parking lock lever and washer.



Special tool in position for installing the parking pawl spring.

Adjusting POWERGLIDE

Powerglide transmission will help to keep new Chevrolet owners as regular customers

Neutral Safety Switch:

All cars with automatic torque converters are provided with neutral safety which prevents the operation of the starting motor except when the transmission is in the neutral or parking position. This switch is a safety feature installed for the purpose of preventing car motion when starting the engine. It is important therefore that this switch be in proper adjustment.

To adjust this switch loosen the two assembly mounting screws. Place the selector lever in neutral with clip over flats on end of the shift

(*Continued on page* 114)

Pop Finds a



J. Manifold Gaskett gathered the ice cream cones in one grand bouquet and swept through the doorway.

Pop's sales psychology and diagnosis has a growling customer purring like a kitten and his car on the go again

s a Starter Stopper



Pop O' Neill

by Charles M. Kenyon
Managing Editor

GLENSIDE was being honored by the presence of a great man. At least J. Manifold Gaskett was quite certain that Glenside was being honored by his presence. A traveling salesman (picture frames) for over forty years, J. Manifold was quite impressed by his knowledge of the world. He was also impressed by his sense of duty as honored guest in his sister's household and by his many nephews and nieces. Consequently, after the usual amenities had been bandied about for a reasonable length of time, J. Manifold decided the time had come to prove his greateness. He and little Jackson M., the oldest nephew slipped unnoticed out the side door and took his big Chrysler Imperial down to Porter's Ice Cream Palace, to get cones for the whole tribe. The afternoon was hot; the visit, his first in fifteen years, had been trying, and J. Manifold's temper was worn to a thin, frayed edge.

With the accumulated knowledge of youth, little Jackson knew which brother wanted orange pineapple; which sister ate only pistachio, and how many each of strawberry, vanilla and chocolate. It was at the ice cream counter that J. Manifold Gaskett's importance was first felt by the denizens of Glenside.

He handed the counter man a twenty dollar bill. The counter man studied it intently, first one side then the other. Then he turned it back to look at the face again. "Just a minute," he said. He disappeared into a back room, then came out. "The bill's sure all right, but I haven't change for anything like that. Ain't you got nothin' smaller?"

"My dear fellow," replied J. M. pompously, "perhaps I do. I seldom bother to look at the denomination of a bill."

"Hand it back then," said the young redhead with a grin. "We'll make believe it's a five."

J. Manifold arrogantly tried to stare this native down, but the counter boy returned him gaze for gaze until the great man brought forth from a side pocket two crumpled one dollar bills.

"That's more our size," said the youth still grinning and spun his change across the counter.

"Come along, Jackson," he said in his deepest voice. He gathered the ice cream cones in to one grand bouquet and swept through the doorway, little Jackson three steps behind. When they reached the Chrysler the boy hopped in. J. M. handed him the huge batch of cones and slid behind the wheel. He flipped on the key and with a muttered remark or two about the churlish nature of Glenside's peasantry, he pushed the starter button. Nothing happened. He pushed the starter again. He flicked the key on and off several times. Still nothing happened. The Chrysler Imperial refused to start.

"What's the matter, Uncle Jack," said the boy. "Out of gas?"

"No," said Uncle Jack testily mopping his brow, "it's not out of gas."

"Can't you start it?" persisted his nephew.

"Certainly I can start it," said J. M. trying futilely once again. At last he got out, banged the door, opened the hood and peered inside.

"I guess you know all about cars, Uncle Jack?"

"Enough to know that this one won't start and I don't intend to crank it," said J Manifold.

"What's a crank?" asked the boy.

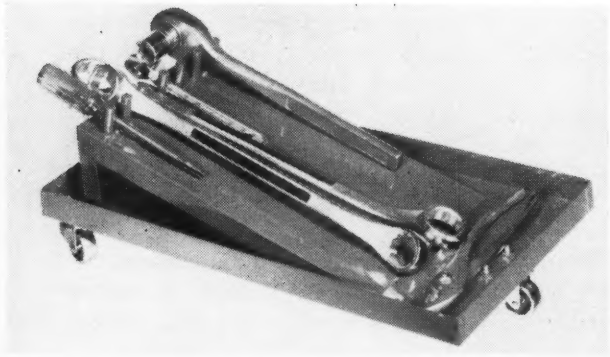
His uncle ignored him. "Where do I call to get a mechanic in this Godforsaken spot?"

"Oh, that's easy," said little Jack. "Everyone in town calls Pop O'Neill when they're really in trouble." And like the ice cream parlor, shortly afterwards Pop O'Neill's Repair Shop felt the presence of the great man visiting Glenside. When the phone rang Tommy Winters, Pop's apprentice, answered. Tommy listened to the petulant tale of woe and promised to get down there soon.

But things were rushed at the repair shop that morning and it was not more than twenty minutes that Tommy was able to get off on the job. In the

(*Continued on page* 96)

NEW Products SHOW WINDOW



▼270. Ignition Tool Kit

Bonney Forge and Tool Works announces a new set of eleven ignition tools covering all the tool requirements for servicing normal ignition jobs. The set includes the six most popular sizes of open end ignition wrenches, ignition pliers, feeler gage, neon screwdriver, point file and adjustable wrench. The tools come packed in a leatherette roll.



◀271. Tool Dolly

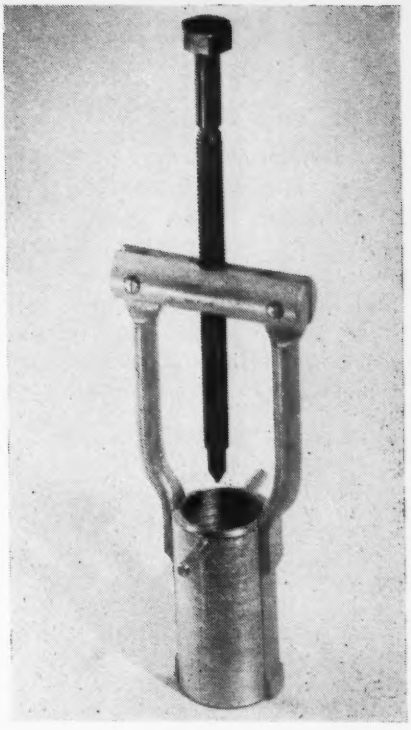
The Tool Chest Dolly Mfg. Company is marketing the Lowboy tool carrier, designed to hold tools together and off the floor, close to the mechanic. The tools are held at a 15-degree incline to make them easily accessible, and heavy steel pegs help to keep the tools upright and separated. The dolly is made of 26-gage sheet metal, spot welded. The carrier is 9 by 16 inches with an overall height of 5¾ inches.



▲272. Engine Efficiency Gage

The Stewart-Warner Corporation has introduced the "Motor Minder," an instrument which is designed to enable the driver to operate his automobile engine at maximum efficiency. The instrument operates on the principle of a vacuum gage and is divided into five different colored segments, and can be mounted on the dash or steering post.

For Further Information Use Postcard Facing Next Page



▼273. Economy Test Set

The Allen Electric and Equipment Company announces the development of a new, moderately priced



Motor Analyzer. The unit will perform all tests essential for modern diagnosis, according to the manufacturer. It is of welded steel construction, finished in baked enamel and has 4 inch swivel type casters which are equipped with brakes. A large storage compartment for small units, test leads and so forth, has a piano-hinged cover which, when closed, provides a working area.

▲274. Overdrive Bushing Puller

Perry Manufacturing Company announces a new transmission extension and overdrive bushing puller for '49, '50 and '51 Ford and Mercury cars. The manufacturer states that the new puller will remove both the bushing and the oil seal in one simple operation without disconnecting the extension housing or disassembling the overdrive.

▼275. Brake Work Merchandiser

The American Brakeblok Division of The American Brake Shoe Company is currently offering their American Brakeblok Pedal Blok free of charge to establishments engaged in brake work. The Pedal Blok is placed under the brake pedal and the motorist is asked to step on his brakes. If the pedal hits the Pedal Blok, his brakes are considered unsafe. The purpose of the device is to help find cars that need brake work before pulling a wheel.

(*Continued on page* 52)



New Products . . . . . Continued from Page 51

276. Top Kit

Champion Finishing Company has developed a convertible top dressing kit, which includes one gallon of top dressing, a heavy duty roller coater and a steel tray. This kit, suitable for use in body shops, car dealers, garages and service stations, is sufficient for application on four average tops



and is available in black, clear, and tan. The roller coater is claimed to permit an even uniform coat of dressing to be applied quickly. The top dressing contains a plastic resinous base which penetrates the fibers of the fabric.

277. Wall Chart

The Cleveland Graphite Bronze Company's Replacement Sales Division is making available a new "Monmouth" wall chart, designed to increase sales and improve customer relations for front end shops. The multi-colored chart is over 3 feet by 4 feet in size and shows front suspensions for all popular makes of cars. It also gives a detailed drawing of a typical suspension with all parts labeled, and a pair of sketches showing front end differences between normal and defective springs.

278. Radiator Cleaner

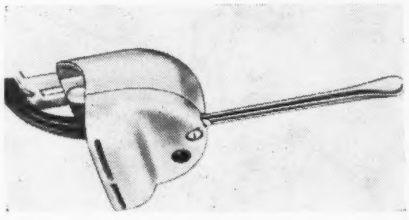
The Fram Corporation has developed a new radiator and water cleaner, designed to be installed in the cooling system to filter and soften the water and to inhibit rust. The Fram unit uses standard heater hose and is packed complete with all parts, brackets and fittings. It makes use of a replacement cartridge which is changed periodically. When the coolant water enters the unit, it contacts the softening and rust-inhibiting chemicals. It then passes through the filtering media, where all solids are removed, and passes out again into the cooling system. Two sizes of the Fram radiator and water cleaner service all cars, trucks and busses.

279. Sidewall Cleaner

Swaco Products Corporation is now marketing a whitewall cleaner which is designed to help prolong the life of white side walls by removing injurious road film such as oil, grease and solvents, the weakening agents of tire caracasses. It is merchandised in a highly concentrated paste form in 5 gallon 1 gallon pails, as well as in 2 pound consumer cans.

280. Signal Switch

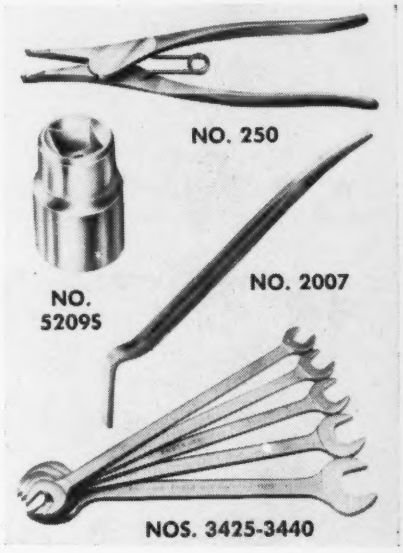
The Automotive Division of the Sparton-Withington Company is marketing a new, self-cancelling directional signal switch designed to fit all trucks and most passenger cars. An adjustable bracket permits quick mounting on steering columns and permits ample clearance for gear shift and for truck air brake arms. Other features include a pilot light built into the switch housing, which



works in conjunction with the indicator light and an audible clicking signal. The switch will be made available separately, to modernize old systems in cars, in conversion kits to adapt parking and tail lights of modern cars and in a complete universal set. The universal set includes 4 Sparton flasher-type lamps, 2 with red lens, 2 with clear lens plus heavy rubber gaskets to permit flush mounting on curved surfaces.

281. Hand Tools

Plomb Tool Company announces the addition of three new Proto special automotive tools. One of the new tools is a dual purpose, No. 250, lock ring plier, which spreads both the soft iron "horseshoe" lock washers used on car brakes and the tempered steel lock or snap rings of the contracting type used on shafting to locate gears, bearings, sprockets, pulleys and wheels. The plier is 7 3/4 inch long and has a 1¼ inch jaw



spread. Serrations are employed on the jaw to prevent slippage. Another new Proto tool is the No. 5209S "Dynadrain" socket, a 3/8 inch drive socket wrench with 9/32 inch square opening for turning the ⅛ inch drain plug with 9/32 inch square on the Buick Dynaflow torque converters. The third tool is the No. 2007 Chevrolet brake adjuster, which has a 45 degree spoon, 1 3/16 inch long, and a 15 degree spoon, 1 7/16 inch long. This tool supplements the No. 2006 brake adjuster, suitable for most cars except Chevrolets.

282. Display Kit

The Pres-A-Lite Corporation announces a new self dispensing display kit for the Pres-A-Lite automatic cigarette lighter. This kit

(*Continued on page* 54)



HERE'S HOW TO GET

Free Information

Here is a recap of the New Products described in this issue, along with their code numbers.

270. Ignition Tool Kit
271. Tool Dolly
272. Engine Efficiency Gage
273. Economy Test Set
274. Overdrive Bushing Puller
275. Brake Work Merchandiser
276. Top Kit
277. Wall Chart
278. Radiator Cleaner
279. Sidewall Cleaner
280. Signal Switch
281. Hand Tools
282. Display Kit
283. Service Grinder
284. Grinder
285. Filter Chart
286. Body Tool Kit
287. Refinisher Book
288. Tool Stand
289. Battery Jug
290. Adhesives
291. Back-Up Light
292. AERA Booklet
293. Ratchet Tool
294. Dual Dollies
295. Parts Catalog
296. Dispenser
297. Swivel Light
298. Degreasing Book
299. Floor Merchandiser
300. Luggage Carrier

On each of the postage-paid postcards below you can request further data on items described in this New Products section. Fill out one of the sections completely for each item in which you are interested.

USE THESE POSTCARDS

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

6/51

Name .....
Title .....
Company .....
Co. Address .....
.....
Chilton's MOTOR AGE, Phila. 39

☐ Write in the number of the product about which you want more information

New Products Show Window

Continued from Page 52

was designed for automotive jobbers, and contains three Pres-A-Lites. The display kits are packed twenty in a shipping container (60 Pres-A-Lites) and in each container is included an assortment of counter cards, window posters, handout folders, envelope stuffers and mat sheets. The Pres-A-Lite is an automatic cigarette lighter which holds twenty-three cigarettes and hands them to the driver one by one fully lighted and ready to smoke without removing the eyes from the road. It is claimed to fit all cars and to clamp easily to any steering post. It plugs into the car lighter or connects to the ignition on the dashboard.

FIRST CLASS
PERMIT No. 18
Sec. 34.9, P. L. & R.
Philadelphia 39, Pa.

BUSINESS REPLY CARD
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY

***Chilton's* MOTOR AGE**
Chestnut and 56th Sts.
Philadelphia 39, Pa.

Attention: **Frank P. Tighe, Editor**

FIRST CLASS
PERMIT No. 18
Sec. 34.9, P. L. & R.
Philadelphia 39, Pa.

BUSINESS REPLY CARD
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY

***Chilton's* MOTOR AGE**
Chestnut and 56th Sts.
Philadelphia 39, Pa.

Attention: **Frank P. Tighe, Editor**

FIRST CLASS
PERMIT No. 18
Sec. 34.9, P. L. & R.
Philadelphia 39, Pa.

BUSINESS REPLY CARD
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY

***Chilton's* MOTOR AGE**
Chestnut and 56th Sts.
Philadelphia 39, Pa.

Attention: **Frank P. Tighe, Editor**

283. Service Guide

American Brake Block Division of American Brake Shoe Company announces a revised edition of the "Brake Service Guide" for distribution to automotive repair shops and brake service stations. This guide includes information covering brakes on the new model cars and is filled with suggestions and illustrations to help repairmen locate trouble and repair it quickly. All principal types of automotive brake are covered in the guide. Included are sections on heavy duty bus and truck assemblies, adjustment of hand brakes, the new Chrysler Disc brake and other information.

284. Grinder

Ammco Tools, Inc. is now producing their new Model 2800 Tap-Rock Grinder. This tool is designed to grind the faces of valve lifters, tappet screws, and rocker arms in their normal operating position. It removes the worn depression caused by constant pounding of the valve stems thus allowing the feeler gage to give accurate reading. The Tap-Rock resurfaces the tappet screws on L head engines and valve lifters on V type engines without removing them from the motor block. The rocker arms on overhead valve engines can be surfaced without disassembling.

285. Filter Chart

Purolator Products, Inc. announce a new type of wall chart for dealers, providing complete installation data on all oil filter refills for cars, trucks and tractors. The chart features a detailed cross-referenced guide providing up to the minute information regarding the interchange of elements. The chart contains a filter identification page with cutaway drawings of the best selling Purolator and competitive units. Silhouettes and dimensions enable a dealer to identify most of the filter housings, no matter how dirty or disfigured and the correct Purlator refills for them.

(*Continued on page* 136)

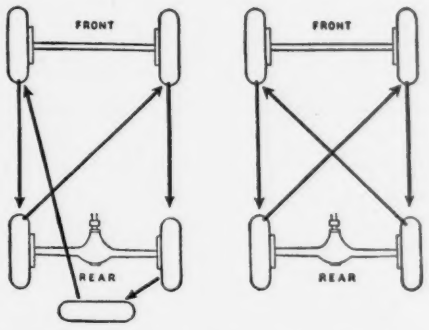


How Care Saves Tires

In a national emergency, repair shops must share with the car owners the responsibility of tire conservation

by Arthur Nellen, Jr.





Two approved methods of rotating tires

To Extend Tire Life:

Check tire pressure at regular intervals
Alternate the tires every 5,000 miles
Check the front end and frame alinement
Balance the wheels
Replace worn front end and suspension parts
Remind owners of careful driving habits

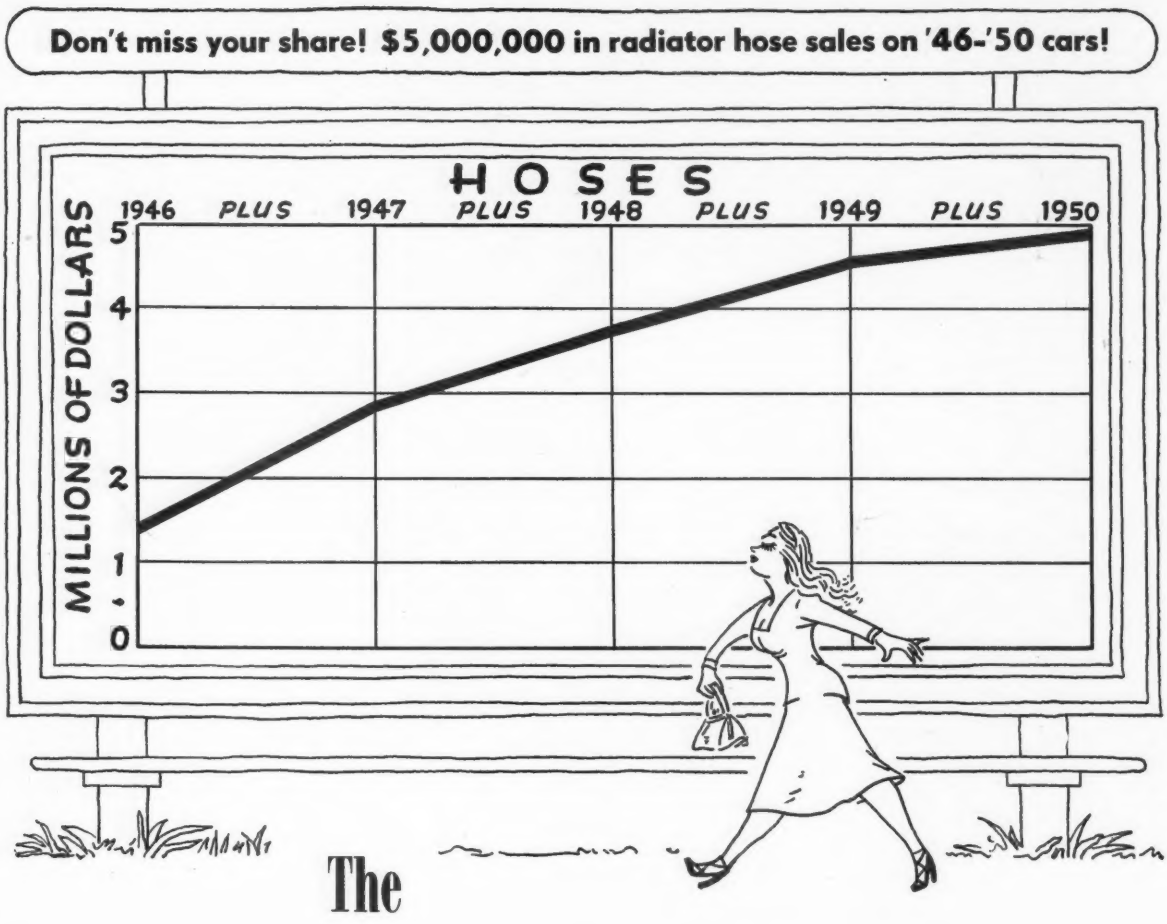
TO help your customer get the most miles from his tires, keep a close check on all the factors which affect tire wear. You can generally spot the cause of abnormal wear by the appearance of the casing. A shop can do its customers a great service by eliminating abnormalities which wear tires excessively, before damage is done. The following five points are instrumental in causing abnormal tire wear.

Out-of-Balance. An out-of-balance condition causes a definite cup-shaped spot on the casing. At the heavy point of the tire the rubber will be worn away, while the rest of the tread may be unaffected. If this condition is present, balance the tire on a dependable balancing machine and rotate the tires so that the worn tire is on the rear.

Improper Inflation. If the casing is worn more at the center than it is at the outer edges, the tire has been running over-inflated. If it is worn more at the outer edges than at the center, the cause is under-inflation. Proper inflation is important in present day driving where sustained high speeds are encountered. Be positive that your tire gaging equipment is accurate and be sure of the correct pressure when inflating the tire. If the tire is specified for 24 lbs pressure when cool, it is expected to go up to 27 lb when driving around the city, and on steady highway driving it will go up to 29 lbs. Therefore when checking or inflating tires, take these conditions into consideration.

Mis-Alignment. If a wheel is ¼ in. off on toe-in, the tire will be dragged 67 ft side ways every mile. Front end alinement is of fundamental importance when considering tire wear. Castor, camber, and toe-in will cause the tires

(*Continued on page* 110)



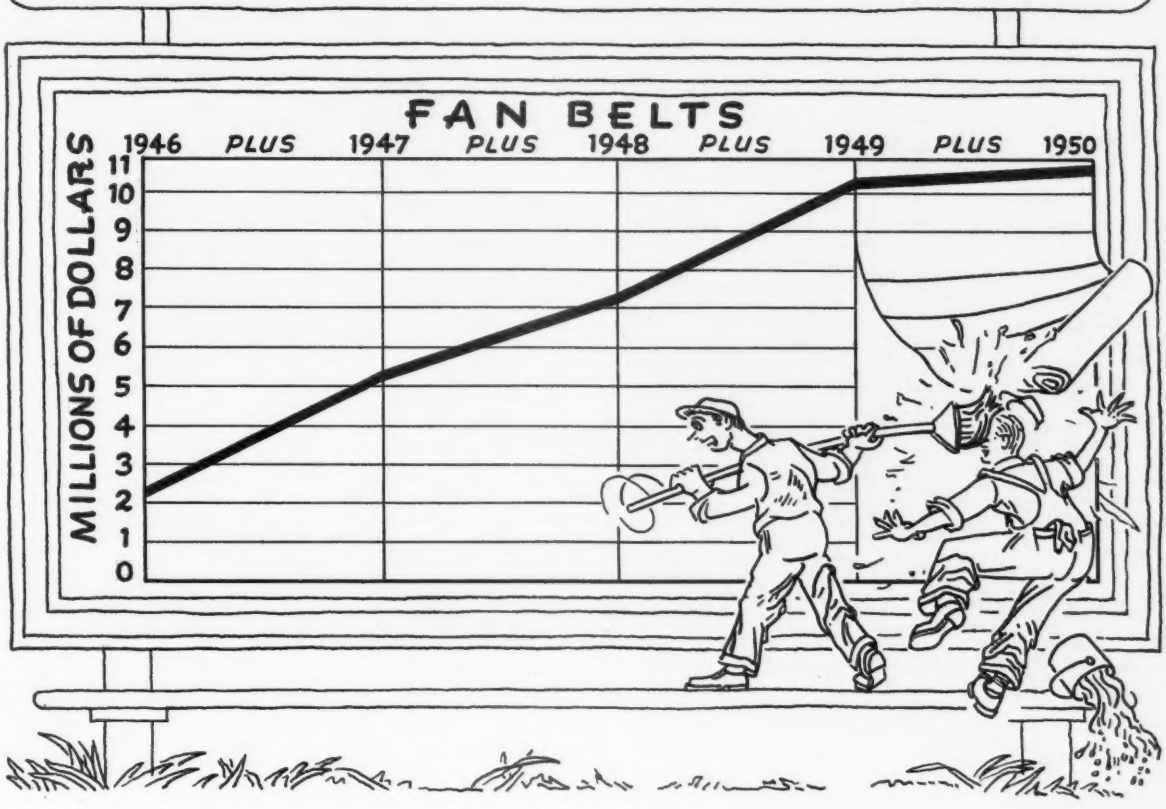
The Million Dollar Look

Motor Age's editorial staff examined and tested 1,000 fan belts and hoses

A QUICK look under the hoods of the sixteen million 1946-50 cars would disclose three and one quarter million fan belts and two million radiator hoses in need of replacement. These startling figures, projected from the results of a Motor Age Editorial Investigation, represent parts and labor sales exceeding fifteen million dollars! These parts are bound to be replaced sooner or later, but both the shop and the car owner will be better off if the job is done early. Don't let this fifteen million dollar sale be "the one that got away!"

The graph seen on the billboard above, illustrating the tremendous possibilities for repairmen, shows a cumulative figure of the potential income from fan belts on 1946 to 1950 cars. 32.6 per cent of the 1946 cars checked, for instance, needed fan belt replacements. This percentage of the total number of 1946 cars on the road equals 662,587 prospective customers. With the average

Look! Potential fan belt sales on post war cars add up to $10,000,000!



by Arthur Nellen, Jr.
Service Editor

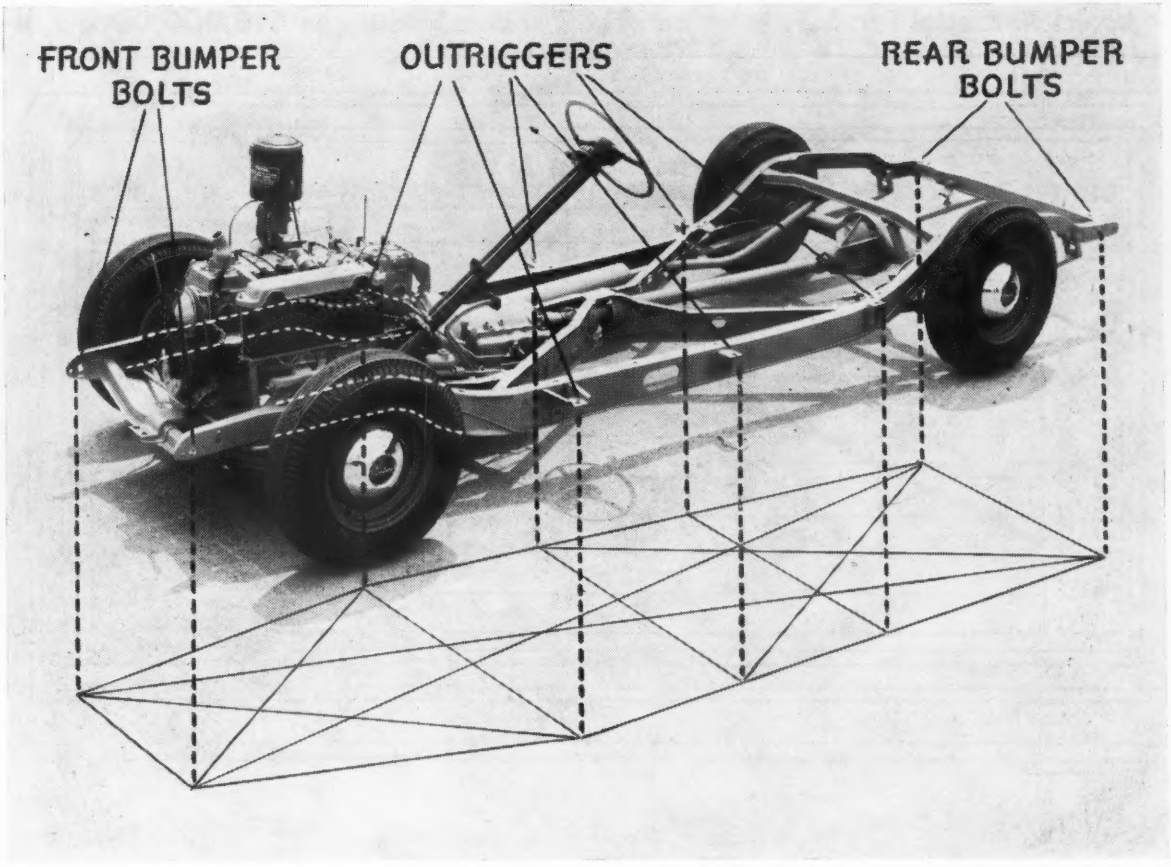
and came up with a $15,000,000 market

price of fan belts now $2.25 and installation charge $1.00, the possible income from fan belts on 1946 cars alone amounts to $1,490,820. By using the same process to compute '47, '48, '49 and '50 figures and adding them consecutively to the 1946 sum, we have a total potential market of $10,657,805 worth of fan belts and labor.

Projections from Motor Age's Editorial Investigation indicate a wealth of business stemming from radiator hose inspection, too. Of the 2,032,478 1946 cars on the road, 29.3 per cent, or 595,516 are probable prospects for hose replacement. The price of just one upper hose averages $1.50, and the average charge for installation is .90, so the potential market is $1,429,238. Almost one and one-half million dollars on 1946 cars alone. The sales dollars accumulate from 1946 to 1950, as shown on the graph above, until the market tips the scales just short of the five million dollar mark.

Repair shops and car dealer service departments can cash in on a large portion of the fifteen million dollar fan belt and hose market by checking these parts on every car that is serviced. Only a few seconds are required to check a fan belt for cracks, fraying and wear. Also, the fan belt may be so impregnated with grease and oil that it is slipping on the fan pulley or water pump or, under a heavy electrical load, it may be slipping on the generator pulley. Deterioration due to heat and oil, as well as normal wear, limit the life of a fan belt. For this reason manu-

(*Continued on page* 122)



How to Measure Frames

Here's how to check a frame for damage when you don't have factory specifications

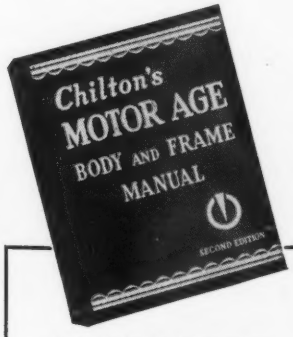
by Arthur Nellen, Jr.
Service Editor

AN automobile frame can be checked for misalignment without any equipment other than a plumb-bob, string chalk and measuring tape. A mechanic can, in as little as one-half hour, determine the extent to which a frame has been damaged.

A plumb-bob is dropped from key points around the frame to a perfectly flat floor. The points must be at a fixed location on the frame itself or mounted rigidly to the frame. Each point is marked on the floor with chalk. The most common and easiest points from which to drop the plumb-bob are outriggers, body bolt holes and bumper bolt holes.

When dropping the plumb-bob from the various points measure

(*Continued on page* 126)



Other helpful information of this type is available in Chilton's Motor Age Body and Frame Manual



Automotive Service Information

from Automotive Headquarters

The Chilton Company, which publishes MOTOR AGE, is widely known as Automotive Headquarters for factual information. Over the years, many statistics have been compiled for publication in this magazine and in its related publications, *Commercial Car Journal* and *Automotive Industries*.

Believing that one of the great services which an Automotive Service Industries publication can give its readers is to make available the latest trade facts and figures, we offer this data to help you do your job.

In the January issue, we presented complete automobile specifications for the use of car dealers and independent repair shop operators. Readers have told us how helpful this information has been. If you'd like to have this material supplied you regularly, write the editor your comments.

PASSENGER CARS • TRUCKS • BUSES

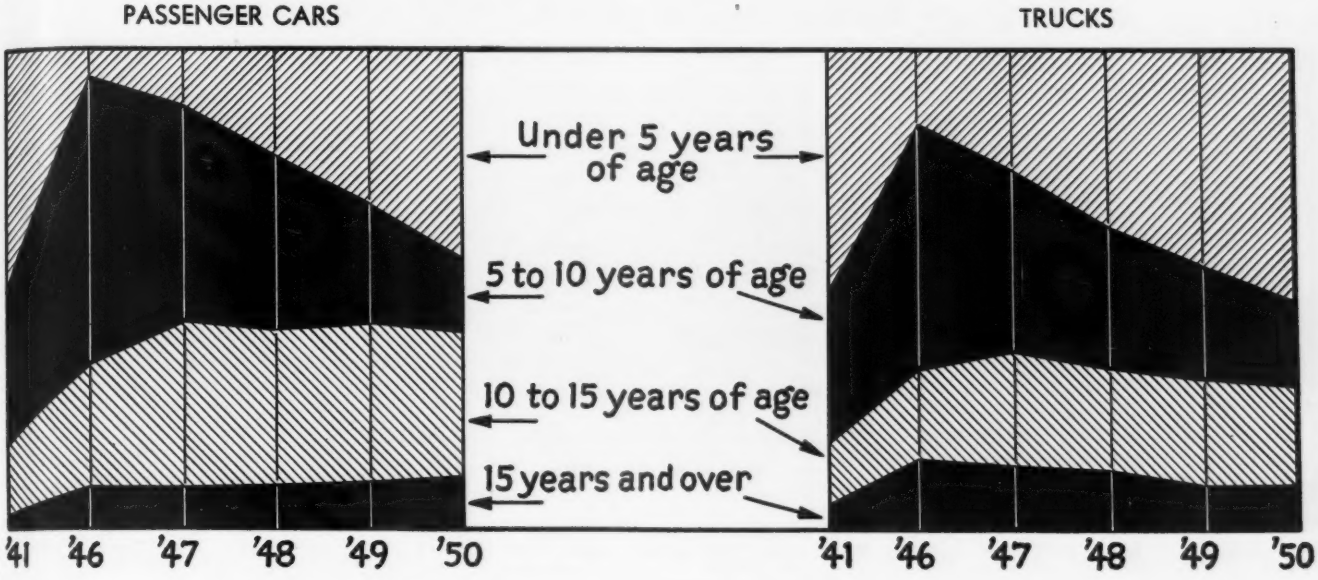
U. S. Motor Vehicle Registrations, 1900-1950

Year	PASSENGER CARS			TRUCKS AND BUSES			TOTAL VEHICLES	
	Units	Per Cent of Total	Per Cent Increase	Units	Per Cent of Total	Per Cent Increase	Units	Increase Per Cent
1900.....	8,000	....	150	.....	....	....	8,000	150
1901.....	14,800	....	85	.....	....	....	14,800	85
1902.....	23,000	....	55	.....	....	....	23,000	55
1903.....	32,920	....	43	.....	....	....	32,920	43
1904.....	54,590	98.7	66	700	1.3	100	55,290	68
1905.....	77,400	98.2	42	1,400	1.8	100	78,800	43
1906.....	105,900	98.0	37	2,200	2.0	57	108,100	37
1907.....	140,300	98.0	33	2,900	2.0	32	143,200	32
1908.....	194,400	98.0	38	4,000	2.0	38	198,400	38
1909.....	305,950	98.1	57	6,050	1.9	51	312,000	57
1910.....	458,377	97.8	50	10,123	2.2	65	468,500	50
1911.....	618,727	96.8	35	20,773	3.2	105	639,500	36
1912.....	901,596	95.5	46	42,404	4.5	104	944,000	48
1913.....	1,190,393	94.6	32	67,667	5.4	60	1,258,060	33
1914.....	1,664,003	94.4	36	99,015	5.6	46	1,763,018	40
1915.....	2,332,426	93.6	42	158,506	6.4	60	2,490,932	41
1916.....	3,367,889	93.1	43	250,048	6.9	58	3,617,937	45
1917.....	4,727,468	92.4	42	391,057	7.6	56	5,118,525	41
1918.....	5,554,952	90.2	21	605,496	9.8	55	6,160,448	20
1919.....	6,679,133	88.2	21	897,755	11.8	48	7,576,888	23
1920.....	8,131,522	88.0	22	1,107,639	12.0	23	9,239,161	22
1921.....	9,212,158	87.8	14	1,281,508	12.2	16	10,493,666	11
1922.....	10,704,076	87.2	16	1,569,523	12.8	22	12,273,599	17
1923.....	13,253,019	87.8	24	1,849,086	12.2	18	15,102,105	23
1924.....	15,436,102	87.6	15	2,176,838	12.4	18	17,612,940	17
1925.....	17,439,701	87.5	13	2,501,023	12.5	15	19,940,724	13
1926.....	19,220,885	87.3	10	2,831,674	12.7	13	22,052,559	11
1927.....	20,142,120	87.2	5	2,997,439	12.8	6	23,139,559	5
1928.....	21,308,159	87.1	6	3,203,524	12.9	7	24,511,683	6
1929.....	23,060,421	87.1	8	3,442,087	12.9	7	26,502,508	8
1930.....	22,972,745	86.7	—0.4	3,559,254	13.3	3.4	26,531,999	0.1
1931.....	22,420,629	86.3	—2.4	3,573,267	13.7	0.4	25,993,896	—2.0
1932.....	20,994,092	86.2	—6.4	3,347,730	13.8	—6.3	24,341,822	—6.4
1933.....	20,557,493	86.2	—2.1	3,292,439	13.8	—1.7	23,849,932	—2.0
1934.....	21,535,199	86.6	4.7	3,346,268	13.4	1.6	24,881,467	4.3
1935.....	22,513,715	86.1	4.5	3,644,997	13.9	8.9	26,158,712	5.1
1936.....	24,044,432	85.6	6.8	4,047,277	14.4	11.0	28,091,709	7.4
1937.....	25,356,786	85.5	5.5	4,292,484	14.5	6.1	29,649,270	5.5
1938.....	25,264,589	85.5	—0.4	4,283,395	14.5	—0.2	29,547,984	—0.3
1939.....	26,147,798	85.3	3.5	4,496,770	14.7	5.0	30,644,568	3.7
1940.....	27,240,475	85.3	4.2	4,683,376	14.7	4.1	31,923,851	4.2
1941.....	29,240,417	85.6	7.3	4,911,990	14.4	4.9	34,152,407	7.0
1942.....	27,683,529	85.4	—5.3	4,741,298	14.6	—3.5	32,424,827	—5.1
1943.....	25,841,215	84.7	—6.7	4,657,882	15.3	—1.8	30,499,097	—6.0
1944.....	25,298,639	84.6	—2.1	4,611,966	15.4	—1.0	29,910,605	—1.9
1945.....	25,398,824	83.5	0.4	5,025,233	16.5	9.0	30,424,057	1.7
1946.....	27,834,543	83.6	9.6	5,858,813	17.4	16.6	33,693,356	10.7
1947.....	30,482,007	81.8	9.6	6,754,256	18.2	15.4	37,236,263	10.6
1948.....	33,011,780	81.5	8.3	7,490,343	18.5	11.0	40,502,123	8.9
1949.....	36,235,930	82.3	9.8	7,770,852	17.7	3.7	44,006,782	8.6
1950.....	40,011,267	82.9	10.4	8,272,068	17.1	6.4	48,283,335	9.7

— Denotes decrease. Sources: Public Roads Administration through 1930; 1931 to 1950 Motor Age count.

REGISTRATIONS

52% OF CARS IN USE ARE PREWAR MODELS



Number and Per Cent of Cars in Use, by Age Groups*

Age in Years	1950 Units	1950 % of Total Simple	1950 % of Total Cumul.	1949 Units	1949 % of Total Simple	1949 % of Total Cumul.	1948 Units	1948 % of Total Simple	1948 % of Total Cumul.	1947 Units	1947 % of Total Simple	1947 % of Total Comul.
Under 1	2,988,755	8.34	8.34	2,638,026	8.09	8.09	1,673,487	5.63	5.63	1,367,295	5.01	5.01
1-2	4,934,895	13.78	22.12	2,980,927	9.14	17.23	3,100,367	10.43	16.06	2,056,130	7.54	12.55
2-3	3,033,107	8.47	30.59	3,065,637	9.40	26.63	2,048,095	6.89	22.95	.....	....	....
3-4	3,052,019	8.52	39.11	2,046,674	6.27	32.90	.....	....	....	.....	....	....
4-5	2,032,478	5.67	44.78	.....	....	....	.....	....	....	.....	....	....
5-6	.....	....	....	.....	....	....	.....	....	....	1,065,336	3.90	16.45
6-7	.....	....	....	.....	....	....	1,012,305	3.41	26.36	4,085,413	14.97	31.42
7-8	.....	....	....	1,006,337	3.09	35.99	4,044,717	13.48	39.84	3,113,260	11.41	42.83
8-9	998,669	2.79	47.57	4,004,581	12.28	48.27	3,093,315	10.41	50.25	2,378,798	8.72	51.55
9-10	3,954,540	11.04	58.61	3,089,109	9.47	57.74	2,345,276	7.89	58.14	1,679,027	6.15	57.70
10-11	3,033,187	8.47	67.08	2,326,487	7.13	64.87	1,661,648	5.59	63.73	3,303,955	12.11	69.81
11-12	2,244,564	6.26	73.34	1,621,176	4.97	69.84	3,186,039	10.72	74.45	2,789,570	10.22	80.03
12-13	1,489,681	4.16	77.50	3,074,764	9.43	79.27	2,657,338	8.94	83.39	1,592,404	5.84	85.87
13-14	2,709,388	7.56	85.06	2,495,486	7.65	86.92	1,489,556	5.01	88.40	967,340	3.55	89.42
14-15	2,074,556	5.79	90.85	1,334,612	4.09	91.01	885,957	2.98	91.38	567,768	2.08	91.50
15-16	1,052,918	2.94	93.79	762,086	2.34	93.35	508,667	1.71	93.09	345,826	1.27	92.77
16-17	567,062	1.58	95.37	434,763	1.33	94.68	316,956	1.07	94.16	596,039	2.18	94.95
17 and older	1,656,896	4.63	....	1,737,780	5.32	....	1,731,288	5.84	....	1,377,057	5.05	....
Total	35,822,715	100.00	100.00	32,618,445	100.00	100.00	29,715,061	100.00	100.00	27,285,218	100.00	100.00
Age not known	99,571	....	....	112,273	....	....	252,658	....	....	236,177	....	....
Total in use	35,922,286	....	....	32,730,718	....	....	29,967,719	....	....	27,521,395	....	....
Average age of known models	7.81 yrs.			8.44 yrs.			8.73 yrs.			8.91 yrs.		

* Based on data from Reuben H. Donnelley Corp. as of July 1 of each year.

Number and Per Cent of Trucks in Use, by Age Groups†

Age in Years	1950 Units	1950 % of Total Simple	1950 % of Total Cumul.	1949 Units	1949 % of Total Simple	1949 % of Total Cumul.	1948 Units	1948 % of Total Simple	1948 % of Total Cumul.	1947 Units	1947 % of Total Simple	1947 % of Total Cumul.
Under 1	549,909	7.31	7.31	468,471	6.70	6.70	525,189	8.06	8.06	366,847	6.27	6.27
1-2	942,603	12.53	19.84	983,653	14.06	20.76	832,635	12.79	20.85	785,853	13.44	19.71
2-3	983,383	13.07	32.91	824,162	11.78	32.54	769,516	11.82	32.67	188,901	3.23	22.94
3-4	810,705	10.77	43.68	757,071	10.82	43.36	185,614	2.85	35.52	89,542	1.53	24.47
4-5	742,735	9.87	53.55	173,416	2.48	45.84	85,481	1.31	36.83	25,020	.43	24.90
5-6	166,019	2.21	55.76	78,436	1.12	46.96	26,456	.41	37.24	310,574	5.31	30.21
6-7	73,970	.98	56.74	24,653	.35	47.31	297,128	4.56	41.80	690,221	11.80	42.01
7-8	23,632	.31	57.05	279,870	4.00	51.31	661,726	10.16	51.96	511,994	8.76	50.77
8-9	264,297	3.51	60.56	629,246	8.99	60.30	490,969	7.54	59.50	405,418	6.93	57.70
9-10	586,264	7.79	68.35	459,529	6.57	66.87	385,731	5.92	65.42	302,356	5.17	62.87
10-11	429,734	5.71	74.06	358,675	5.13	72.00	285,537	4.38	69.80	496,104	8.48	71.35
11-12	326,111	4.33	78.39	261,282	3.73	75.73	461,843	7.09	76.89	451,660	7.72	79.07
12-13	231,091	3.07	81.46	419,275	5.99	81.72	418,478	6.43	83.32	281,566	4.82	83.89
13-14	364,745	4.85	86.31	372,740	5.33	87.05	257,376	3.95	87.27	202,399	3.47	87.36
14-15	315,551	4.19	90.50	224,843	3.21	90.26	828,286*	12.73	....	738,457*	12.64	....
15-16	184,506	2.45	92.95	153,335	2.19	92.45	.....	....	....	.....	....	....
16-17	121,313	1.62	94.57	71,024	1.02	93.47	.....	....	....	.....	....	....
17 and older	408,316	5.43	....	456,641	6.53	....	.....	....	....	.....	....	....
Total	7,524,884	100.00	100.00	6,996,322	100.00	100.00	6,511,965	100.00	100.00	5,846,912	100.00	100.00
Age not known	52,153	....	....	90,806	....	....	93,325	....	....	85,469	....	....
Total in use	7,577,037	....	....	7,087,128	....	....	6,605,290	....	....	5,932,381	....	....
Average age of known models	6.96 yrs.			7.35 yrs.			7.43 yrs.			7.86 yrs.		

TOTAL REGISTRATIONS

Ranking of the States According to Total Registrations

Rank	State	Registrations Units	% of Total	Rank	State	Registrations Units	% of Total	Rank	State	Registrations Units	% of Total
1	California	4,557,893	9.45	18	Georgia	895,242	1.85	35	South Dakota	286,281	.59
2	New York	3,612,325	7.48	19	Virginia	877,483	1.82	36	Maine	275,023	.57
3	Pennsylvania	3,119,279	6.47	20	Kansas	852,575	1.77	37	North Dakota	273,274	.57
4	Texas	2,929,245	6.07	21	Oklahoma	820,931	1.70	38	Idaho	266,542	.55
5	Ohio	2,697,373	5.59	22	Tennessee	803,271	1.66	39	Arizona	262,375	.54
6	Illinois	2,616,000	5.42	23	Kentucky	775,398	1.61	40	Montana	259,287	.54
7	Michigan	2,405,461	4.98	24	Louisiana	708,183	1.47	41	Rhode Island	247,149	.51
8	New Jersey	1,570,558	3.26	25	Connecticut	680,980	1.41	42	Utah	243,184	.50
9	Indiana	1,425,595	2.95	26	Oregon	678,190	1.40	43	New Mexico	233,256	.48
10	Missouri	1,275,000	2.64	27	Maryland	653,631	1.35	44	Dist. of Col.	185,147	.38
11	Massachusetts	1,271,955	2.63	28	Alabama	618,026	1.28	45	New Hampshire	165,295	.34
12	Wisconsin	1,181,400	2.46	29	Nebraska	568,702	1.18	46	Wyoming	141,815	.29
13	Minnesota	1,136,507	2.35	30	South Carolina	559,836	1.16	47	Vermont	118,120	.24
14	Iowa	1,056,090	2.19	31	Colorado	553,894	1.15	48	Delaware	98,473	.20
15	North Carolina	1,041,032	2.16	32	Mississippi	449,630	.93	49	Nevada	74,796	.15
16	Florida	986,179	2.04	33	Arkansas	435,040	.90		Total	48,283,335	100.00
17	Washington	913,200	1.89	34	West Virginia	427,214	.88				

Passenger Cars in Use by Makes and by Model Year*

(As of July 1, 1950)

Makes	1950	1949	1948	1947	1946	1945-'42	1941	1940	1939	1938	1937	1936	1935	1934	Prior to 1934	Year Unknown	Total July 1, 1950
Buick	306,277	311,029	204,948	241,391	138,245	80,330	343,441	259,122	175,628	129,319	160,313	96,345	24,475	17,555	50,399	4,403	2,543,220
Cadillac	35,909	82,909	48,683	53,963	25,553	13,405	59,273	13,013	11,113	7,170	9,135	5,933	1,506	1,047	4,198	635	373,445
Chevrolet	657,898	996,064	685,594	651,161	391,381	226,711	966,739	746,377	532,006	407,480	650,761	592,866	266,259	169,784	368,498	19,449	8,329,028
Chrysler	40,408	129,994	101,117	94,545	68,347	29,397	143,126	83,154	58,084	37,537	67,556	31,639	15,317	7,041	26,317	1,989	935,568
Crosley	3,215	8,318	25,384	16,299	1,890	789	761	243	356							388	57,623
De Soto	30,866	102,375	78,726	72,342	56,788	20,734	89,390	61,600	46,865	30,006	57,328	23,995	11,108	2,965	16,242	1,198	702,528
Dodge	83,925	277,562	200,620	214,048	145,943	60,572	218,349	181,342	162,237	90,006	212,571	164,770	74,434	28,626	57,850	5,428	2,178,283
Ford	637,106	1,004,357	264,592	407,741	415,879	146,691	644,075	504,279	395,193	266,172	534,361	489,860	332,801	176,049	852,276	19,843	7,091,275
Frazer	6,899	21,444	46,979	57,501												1,932	134,755
Graham							742	1,135	2,917	2,028	6,830	4,319	2,986	1,392	4,855	204	27,408
Hudson	68,969	144,400	101,960	75,648	74,763	32,373	77,811	69,674	38,707	26,632	58,122	38,189	16,369	8,692	14,929	2,103	847,341
Hupmobile							163	62	696	701	104	614	1,667	828	5,627	110	10,572
Kaiser	26,240	71,756	89,119	60,745												2,670	250,530
La Salle								19,680	18,135	10,741	19,974	6,465	3,410	1,249	2,991	699	83,344
Lincoln	12,208	61,077	10,783	18,804	13,155	5,381	18,172	18,651	14,962	10,660	13,937	5,662	462	372	1,473	524	206,283
Mercury	159,204	263,156	58,072	82,068	75,015	19,851	83,425	72,398	51,597							3,609	868,395
Nash	111,834	120,867	98,069	90,086	82,627	27,060	74,632	52,941	38,816	25,536	51,677	23,899	8,457	5,268	13,077	1,484	826,310
Oldsmobile	163,610	265,152	161,048	176,565	108,198	58,858	245,653	177,913	116,324	76,644	147,703	116,348	56,406	19,414	19,575	3,960	1,913,371
Packard	50,949	85,737	80,494	39,724	31,320	26,008	62,227	79,578	38,205	35,563	70,510	28,394	10,433	2,171	8,781	1,622	651,716
Plymouth	148,081	531,978	327,518	320,074	226,622	118,310	482,653	375,803	337,532	210,931	387,234	305,054	159,087	96,204	112,547	9,948	4,149,576
Pontiac	214,237	287,589	225,182	211,448	126,576	73,111	303,576	203,298	129,622	80,676	178,850	103,086	48,377	16,410	39,245	4,508	2,245,791
Studebaker	206,370	124,047	158,095	130,765	23,712	40,958	116,136	88,774	65,338	30,733	55,131	28,360	13,606	8,412	19,456	1,973	1,111,868
Willys	15,771	29,345	40,357	32,255	23,282	15,728	18,691	19,897	8,029	8,633	23,063	4,132	2,486	1,187	10,857	818	254,511
Miscellaneous	8,779	15,739	25,767	4,846	3,182	2,422	5,505	4,253	4,202	2,513	4,228	4,628	3,292	2,396	27,703	10,094	129,547
Total	2,988,755	4,934,895	3,033,107	3,052,019	2,032,478	998,689	3,954,540	3,033,187	2,244,584	1,489,681	2,709,388	2,074,556	1,052,918	567,062	1,656,896	99,571	35,922,286

* Data from Reuben H. Donnelley Corp.

Trucks in Use by Makes and by Model Year*

(As of July 1, 1950)

Model Year	Autocar	Brockway	Chevrolet	Crosley	Diamond T	Divco	Dodge	Federal	Ford	FWD	GMC	International	Kenworth	Mack	Pontiac	Reo	Sterling	Studebaker	White	Willys	All Others	Total July 1, 1950
1950	1,063	1,107	195,710	326	2,886	1,967	41,948	548	156,631	79	51,243	42,954	215	4,947	1,171	1,605	201	22,989	5,915	12,704	3,700	549,909
1949	1,468	1,472	324,270	679	4,526	3,488	108,830	915	199,326	215	71,118	95,765	306	6,481	1,506	3,347	192	74,914	7,240	27,590	8,985	942,683
1948	2,653	2,707	294,066	2,647	10,402	5,761	111,363	3,243	226,521	460	75,091	119,530	403	9,044	.....	11,058	400	29,442	10,854	56,792	10,948	983,383
1947	4,426	3,972	205,021	1,617	10,272	5,898	119,708	5,284	171,563	1132	47,652	115,055	481	12,070	.....	10,014	578	39,799	13,113	32,502	10,148	810,705
1946	4,524	3,516	251,558	58	5,023	4,178	111,345	3,736	164,608	729	25,504	84,401	339	4,071	.....	6,950	557	25,681	9,583	26,355	8,619	742,735
1945	2,211	1,968	32,860	7	3,068	1,752	19,469	1,726	40,879	333	11,839	26,923	321	4,508	.....	2,585	405	3,194	6,280	2,849	3,042	166,019
1944	1,165	1,009	15,180	1	1,483	307	6,875	739	16,593	139	6,015	14,001	104	2,684	.....	428	249	1,615	2,941	1,117	1,325	73,970
1943	221	91	2,544	7	202	94	1,971	301	7,421	28	2,400	3,332	31	403	.....	140	54	577	1,106	1,974	735	23,632
1942	788	283	87,171	65	1,436	591	38,027	762	69,238	166	22,489	26,820	68	2,492	.....	1,056	222	2,095	3,188	4,418	3,122	264,297
1941	2,287	1,937	185,793	87	4,876	2,578	73,394	1,027	157,789	317	39,529	77,203	180	7,836	.....	1,376	395	5,141	7,389	2,752	14,418	586,284
1940	1,219	1,123	146,834	18	4,327	1,697	46,072	839	114,647	163	28,197	57,560	125	5,397	.....	338	241	1,507	3,343	2,532	13,557	429,734
1939	1,159	1,146	110,850	9	3,208	1,455	38,264	649	82,786	245	19,441	45,872	96	4,396	.....	604	234	1,887	2,397	1,127	10,606	326,111
1938	785	747	75,025	12	2,424	967	23,680	525	62,198	147	11,239	36,051	50	2,546	.....	1,578	128	1,284	1,877	1,488	8,360	231,091
1937	969	814	120,484	12	3,924	589	38,116	715	109,833	222	23,884	37,371	90	2,652	.....	1,818	195	3,076	2,847	1,027	16,127	364,745
1936	603	818	98,666	8	3,386	463	45,578	806	103,509	211	11,307	33,938	135	1,774	.....	1,157	162	1,086	2,361	1,033	8,590	315,551
1935	356	320	54,173	2	1,850	157	21,880	443	75,083	128	2,430	18,998	56	774	.....	1,098	69	542	901	708	4,540	184,506
1934	383	231	41,445	1	1,290	113	12,184	376	50,036	69	1,594	7,442	41	708	.....	757	44	361	924	93	3,241	121,313
Before '34	1,029	521	89,260	8	1,960	234	14,975	747	239,123	295	3,687	14,889	180	6,395	.....	3,391	549	2,336	2,744	1,135	24,858	408,318
Unknown	130	149	10,929	33	481	198	4,035	242	13,586	34	2,473	5,378	4	448	1,132	347	21	755	867	786	10,325	52,153
Total	27,399	23,931	2,341,539	5,797	67,024	32,487	877,714	23,623	2,061,330	5,112	457,312	863,281	3,205	79,626	3,809	51,645	4,898	218,281	85,670	178,782	164,574	7,577,037

*—Data from Reuben H. Donnelley Corp.

NEW REGISTRATIONS

PASSENGER CARS • TRUCKS

New Passenger Car Registrations by Makes, by Years*

Make of Car	1950 Units	1950 % of Total	1949 Units	1949 % of Total	1948 Units	1948 % of Total	1947 Units	1947 % of Total	1946 Units	1946 % of Total
Chrysler	151,300	2.39	130,516	2.70	105,315	3.02	93,871	2.96	65,532	3.61
De Soto	115,023	1.82	103,311	2.14	82,454	2.36	72,966	2.30	54,420	2.99
Dodge	300,104	4.74	273,530	5.65	213,923	6.13	209,552	6.62	135,488	7.46
Plymouth	547,367	8.65	527,915	10.91	347,174	9.94	313,118	9.89	211,800	11.68
Total—Chrysler Corp.	1,113,794	17.60	1,035,272	21.40	748,866	21.45	689,507	21.77	467,240	25.74
Ford	1,166,118	18.43	806,766	16.67	486,888	13.95	532,646	16.82	326,822	18.01
Lincoln	34,318	.54	37,691	.78	32,638	.93	24,081	.76	10,798	.59
Mercury	318,217	5.03	186,629	3.86	137,512	3.94	111.198	3.51	61,187	3.37
Total—Ford Motor Co.	1,518,653	24.00	1,031,086	21.31	657,038	18.82	667,925	21.09	398,807	21.97
Buick	535,807	8.47	372,425	7.10	244,762	7.01	246,115	7.77	126,322	6.96
Cadillac	101,825	1.61	80,880	1.67	59,379	1.70	53,379	1.69	23,666	1.30
Chevrolet	1,420,399	22.45	1,031,466	21.32	709,609	20.33	640,709	20.23	329,601	18.16
Oldsmobile	372,519	5.89	269,351	5.57	175,531	5.03	180,078	5.68	93,094	5.13
Pontiac	440,528	6.96	321,033	6.63	228,939	6.56	206,411	6.52	113,109	6.23
Total—General Motors Corp.	2,871,078	45.38	2,075,155	42.89	1,418,220	40.63	1,326,692	41.89	685,792	37.78
Frazer	11,884	.19	15,827	.33	57,994	1.66	51,158	1.62	1,873	.10
Henry J.	14,339	.23	.....	....	.....	....	.....	....	.....	....
Kaiser	85,832	1.35	57,995	1.20	108,367	3.10	55,571	1.74	3,501	.19
Total—Kaiser-Frazer Corp.	112,055	1.77	73,822	1.53	166,361	4.76	106,729	3.37	5,374	.29
Crosley	6,896	.11	10,175	.21	25,400	.73	15,934	.50	2,868	.16
Hudson	134,219	2.12	137,907	2.85	109,497	3.14	83,344	2.63	72,454	3.99
Nash	175,722	2.78	135,328	2.80	104,156	2.98	102,808	3.25	85,169	4.69
Packard	73,155	1.16	97,771	2.02	77,843	2.23	47,875	1.51	36,435	2.01
Studebaker	268,229	4.24	199,460	4.12	143,120	4.10	102,123	3.22	58,051	3.20
Willys	33,926	.53	28,576	.59	21,408	.61	23,400	.74	2,329	.13
Misc. Domestic	2,375	.04	1,539	.03	2,910	.09	894	.03	647	.04
Total Independents	806,577	12.75	684,578	14.15	650,695	18.64	433,107	15.25	263,357	14.51
British Austin	5,452	.09	3,642	.08	8,610	.25	.....	....	.....	....
British Ford	1,869	.04	5,087	.10	3,233	.09	.....	....	.....	....
Misel. Foreign	9,015	.14	3,522	.07	4,300	.12	.....	....	.....	....
Total—Foreign	16,336	.27	12,251	.25	16,133	.46	.....	....	.....	....
Total—All Makes	6,326,438	100.00	4,833,342	100.00	3,490,952	100.00	3,167,231	100.00	1,815,196	100.00

* Data from R. L. Polk & Co.

New Truck Registrations by Makes, by Years*

Make of Truck	1950 Units	1950 % of Total	1949 Units	1949 % of Total	1948 Units	1948 % of Total	1947 Units	1947 % of Total	1946 Units	1946 % of Total
Autocar	2,072	.18	1,655	.17	2,770	.27	4,334	.49	4,755	.76
Brockway	2,384	.21	1,626	.17	2,958	.29	4,255	.48	3,683	.59
Chevrolet	414,496	36.28	345,519	35.93	302,219	29.19	235,803	26.82	171,618	27.44
Crosley	422	.04	871	.09	2,411	.23	.....	....	.....	....
Diamond T	5,675	.50	5,172	.54	10,657	1.03	10,475	1.19	5,093	.81
Divco	4,309	.38	3,577	.37	5,618	.54	4,893	.56	3,734	.60
Dodge	99,716	8.73	116,956	12.16	114,431	11.05	126,736	14.42	96,490	15.42
Federal	1,469	.13	1,225	.13	4,026	.39	6,020	.68	4,557	.73
Ford	315,912	27.66	202,179	21.02	225,729	21.81	186,414	21.20	131,469	21.03
F.W.D.	323	.03	337	.04	811	.08	1,195	.14	585	.09
G.M.C.	97,200	8.51	80,407	8.36	74,857	7.23	49,187	5.59	25,645	4.10
Hudson	.....	....	.....	....	117	.01	2,534	.29	2,543	.41
International	97,818	8.56	91,164	9.48	125,203	12.09	113,151	12.87	78,392	12.54
Kenworth	673	.06	396	.04	478	.05	487	.06	.....	....
Mack	9,908	.87	6,862	.71	9,795	.95	10,917	1.24	4,687	.75
Oshkosh	†	....	†	....	173	.02	245	.03	.....	....
Pontiac	1,362	.12	775	.08	.....	....	.....	....	.....	....
Reo	3,876	.34	4,003	.41	10,773	1.04	12,911	1.47	10,489	1.68
Sterling	354	.03	229	.02	411	.04	576	.07	510	.08
Studebaker	45,881	4.02	55,099	5.73	50,657	4.89	41,861	4.76	25,360	4.06
Ward La France	†	....	†	....	271	.03	509	.06	.....	...
White	12,050	1.05	8,318	.86	11,603	1.12	13,086	1.49	10,117	1.62
Willys—Jeep	8,841	.77	14,472	1.50	48,644	4.70	47,612	5.42	42,135	6.74
Willys—Truck	15,799	1.38	18,293	1.90	27,840	2.69	2,207	.25	.....	....
All Others	1,767	.15	2,826	.29	2,722	.26	3,724	.42	3,387	.54
Total	1,142,307	100.00	961,961	100.00	1,035,174	100.00	879,132	100.00	625,249	100.00

* Data from R. L. Polk & Co. † Included with All Others.

PRODUCTION

PASSENGER CARS • TRUCKS • BUSES • TRACTORS • TRAILERS

Factory Sales and Their Wholesale Value, U. S. Plants

Year	PASSENGER CARS			TRUCKS AND BUSES			TOTAL	
	Number of Units	Wholesale Value	Average Wholesale Price	Number of Units	Wholesale Value †	Average Wholesale Price	Number of Units	Wholesale Value
1900.....	4,192	$4,899,443	$1,169	.....	.....	....	4,192	$4,899,443
1901.....	7,000	8,183,000	1,169	.....	.....	....	7,000	8,183,000
1902.....	9,000	10,395,000	1,155	.....	.....	....	9,000	10,395,000
1903.....	11,235	13,000,000	1,157	.....	.....	....	11,235	13,000,000
1904.....	22,130	23,357,692	1,055	700	$1,272,747	$1,818	22,830	24,630,439
1905.....	24,250	38,670,000	1,594	750	1,330,000	1,773	25,000	40,000,000
1906.....	33,200	61,460,000	1,851	800	1,440,000	1,800	34,000	62,900,000
1907.....	43,000	91,620,000	2,131	1,000	1,780,000	1,780	44,000	93,400,000
1908.....	63,500	135,250,000	2,129	1,500	2,550,000	1,700	65,000	137,800,000
1909.....	123,990	159,765,721	1,288	3,297	5,333,683	1,618	127,287	165,099,404
1910.....	181,000	215,340,000	1,189	6,000	9,660,000	1,610	187,000	225,000,000
1911.....	199,319	225,000,000	1,128	10,681	21,000,000	1,966	210,000	246,000,000
1912.....	356,000	335,000,000	941	22,000	43,000,000	1,954	378,000	378,000,000
1913.....	461,500	399,902,000	866	23,500	44,000,000	1,872	485,000	434,902,000
1914.....	548,139	420,838,378	768	24,900	44,219,096	1,776	573,039	465,057,474
1915.....	895,930	575,978,000	643	74,000	125,800,000	1,700	969,930	701,778,000
1916.....	1,525,578	921,378,000	604	92,130	161,000,000	1,747	1,617,708	1,082,378,000
1917.....	1,745,792	1,053,505,781	603	128,157	220,982,668	1,724	1,873,949	1,274,488,449
1918.....	943,436	801,937,925	850	227,250	434,168,992	1,910	1,170,686	1,236,106,917
1919.....	1,651,625	1,365,395,415	827	224,731	371,422,820	1,653	1,876,356	1,736,818,235
1920.....	1,905,560	1,809,170,963	949	321,789	423,249,410	1,315	2,227,349	2,232,420,373
1921.....	1,468,067	1,038,191,037	707	148,052	166,070,810	1,122	1,616,119	1,204,261,847
1922.....	2,274,185	1,494,513,991	657	269,991	226,049,658	837	2,544,176	1,720,563,649
1923.....	3,624,717	2,196,272,116	606	409,295	308,537,929	754	4,034,012	2,504,810,045
1924.....	3,185,881	1,970,096,559	618	416,659	318,580,580	765	3,602,540	2,288,677,139
1925.....	3,735,171	2,458,370,026	658	530,659	458,400,277	864	4,265,830	2,916,770,303
1926.....	3,783,987	2,640,064,519	698	516,947	452,123,435	875	4,300,934	3,092,187,954
1927.....	2,936,533	2,164,670,891	737	464,793	420,130,624	904	3,401,326	2,584,801,515
1928.....	3,815,417	2,576,489,623	675	543,324	437,132,258	804	4,358,759	3,013,621,881
1929.....	4,587,400	2,847,118,562	621	771,020	566,029,644	734	5,358,420	3,413,148,206
1930.....	2,784,745	1,645,398,523	591	571,241	389,436,690	682	3,355,986	2,034,835,213
1931.....	1,973,090	1,111,273,774	563	416,648	262,417,542	630	2,389,738	1,373,691,316
1932.....	1,135,491	618,291,168	544	235,187	136,193,336	579	1,370,678	754,484,504
1933.....	1,573,512	762,736,512	485	346,545	186,069,314	537	1,920,057	948,805,826
1934.....	2,177,919	1,147,116,195	527	575,192	320,143,667	557	2,753,111	1,467,259,862
1935.....	3,252,244	1,709,425,904	526	694,690	379,407,751	546	3,946,934	2,088,833,655
1936.....	3,669,528	2,015,646,217	549	784,587	462,820,474	590	4,454,115	2,478,466,691
1937.....	3,915,889	2,243,732,380	573	893,085	534,494,873	598	4,808,974	2,778,227,253
1938.....	2,000,985	1,236,802,411	618	488,100	334,147,530	685	2,489,085	1,570,949,941
1939.....	2,866,796	1,765,189,067	616	710,496	494,829,231	696	3,577,292	2,260,018,298
1940.....	3,717,385	2,370,654,083	638	754,901	567,820,414	752	4,472,286	2,938,474,497
1941.....	3,779,682	2,567,205,996	679	1,060,820	1,069,799,855	1,008	4,840,502	3,637,005,851
1942.....	222,862	163,813,559	736	818,662	1,427,456,801	1,744	1,041,524	1,591,270,360
1943‡.....	139	101,799	....	699,689	1,451,794,475	2,076	699,828	1,451,896,274
1944‡.....	610	446,704	....	737,524	1,700,928,939	2,306	738,134	1,701,375,643
1945.....	69,532	57,254,655	823	655,683	1,181,955,532	1,803	725,215	1,239,210,187
1946.....	2,148,699	1,979,781,084	921	940,851	1,043,247,276	1,109	3,089,550	3,023,028,360
1947.....	3,558,178	3,963,896,000	1,114	1,239,744	1,709,843,000	1,378	4,797,922	5,672,518,000
1948.....	3,909,270	4,853,402,000	1,242	1,376,155	1,858,210,000	1,350	5,285,425	6,711,612,000
1949.....	5,119,466	6,768,418,000	1,322	1,134,136	1,407,435,000	1,241	6,253,602	8,175,853,000
1950.....	6,665,863	8,729,000,000	1,309	1,337,170	1,747,500,000	1,307	8,003,033	10,476,500,000

Note: Table above includes sales of military vehicles. Prior to 1940 station wagons and other vehicles built on passenger car chassis are included with trucks. In 1940 and later years such vehicles built on passenger car chassis are included with passenger cars.

Values reported are for standard equipment only and exclude Federal excise taxes.

† A substantial part of the trucks reported comprises chassis only, without bodies; hence, the value of bodies for these chassis are not included.

‡ Actual value of passenger car factory sales for 1943 and 1944 are not available. Value figures are approximations based on the average value per unit in 1942. While production of passenger cars ended in February, 1942, some vehicles remained in factory stocks to be sold under rationing orders in 1943 and 1944.

World Motor Vehicle Production, 1949-1950

Courtesy of The American Automobile (Overseas Edition)

Country	1950 Passenger Cars	1950 Trucks	1950 Buses	1950 Total Vehicles	1949 Passenger Cars	1949 Trucks	1949 Buses	1949 Total Vehicles
United States	6,665,863	1,332,263	4,907	8,003,033	5,119,466	1,128,625	5,511	6,253,602
Canada	284,797	105,418	621	390,836	193,556	98,303	725	292,584
Subtotal	6,950,660	1,437,681	5,528	8,393,869	5,313,022	1,226,928	6,236	6,546,186
Australia	20,158	.....	....	20,158	7,881	.....	....	7,881
Austria	.....	.....	....	.....	33	1,600	615	2,248
Belgium	.....	300	....	300	.....	200	†	200
Czechoslovakia	.....	.....	....	20,000	20,839	6,333	†	27,172
Denmark	.....	.....	....	.....	.....	.....	....	.....
Finland	.....	500	†	500	.....	160	170	330
France	257,292	97,981	2,279	357,552	187,677	94,978	2,088	284,743
Germany, West	219,405	82,876	3,812	306,093	103,998	56,736	2,789	163,523
Hungary	.....	1,600	300	1,900	.....	.....	....	.....
Italy	101,310	23,557	2,980	127,847	79,128	4,953	1,973	86,054
Japan	1,594	26,501	3,503	31,598	2,284	25,873	2,143	30,300
Netherlands	.....	1,169	89	1,258	2,530	683	95	3,308
Spain	75	360	....	435	390	96	†	486
Sweden	10,000	6,500	1,500	18,000	5,441	4,371	1,357	11,069
Switzerland	.....	750	†	750	.....	433	283	716
United Kingdom	522,515	262,702	†	785,217	412,290	218,375	†	630,665
U. S. S. R.	65,600	351,000	6,400	423,000	.....	.....	....	375,000
Subtotal	1,197,949	855,796	20,863	2,094,608	822,491	414,791	11,513	1,623,695
World Total	8,148,609	2,293,461	26,391	10,488,477	6,135,513	1,641,719	17,749	8,169,881

† Included with trucks.

Estimated Scrappage of Motor Vehicles

Year	Passenger Cars	Trucks	Total Motor Vehicles	Year	Passenger Cars	Trucks	Total Motor Vehicles
1928	1,973,540	135,038	2,108,578	1940	2,323,228	372,544	2,695,772
1929	2,127,944	288,494	2,416,438	1941	1,731,224	412,083	2,143,307
1930	2,713,655	293,532	3,007,187	1942†	1,861,579	248,114	2,109,693
1931	2,460,257	299,871	2,760,128	1943†	2,048,119	145,885	2,194,004
1932	2,522,936	405,950	2,928,886	1944†	608,306	167,185	775,491
1933	1,930,393	301,160	2,231,553	1945†	+28,308	+62,335	+90,643
1934	910,851	350,057	1,260,908	1946†	+620,523	+208,331	+828,854
1935	1,765,392	211,954	1,977,346	1947	519,767	+16,311	503,456
1936	1,873,780	209,364	2,083,144	1948	963,444	320,718	1,284,162
1937	2,171,398	373,042	2,544,440	1949	1,611,927	658,821	2,270,748
1938	1,983,218	374,438	2,357,656	1950*	2,551,000	641,000	3,192,000
1939	1,770,168	273,373	2,043,541				

† The actual computations for the years 1942 through 1946 give unrealistic scrappage estimates for these years because of the cars and trucks being placed in storage during 1942 and then being returned to service at the end of the war.
+ Indicates the increase in number of registrations over the number of new vehicles sold.
* Preliminary data.

These estimated scrappage data were computed from total registrations of cars and trucks as compiled by Motor Age and new registrations of cars and trucks as reported by R. L. Polk & Co.

Passenger Car Factory Sales by Body Types

Automobile Manufacturers Association

Body Type	Units	% of Total
1950		
4-Door Sedans	3,023,044	45.36
2-Door Sedans, Coaches, Coupes(1)	2,631,039	39.47
Business Coupes	98,577	1.48
"Hard top" Coupes and Sedans	590,235	8.85
Convertibles Except "Hard Top"	206,000	3.09
Station Wagons(2)	104,862	1.57
Chassis	12,106	.18
Total	6,665,863	100.00
1949		
4-Door Sedans	2,519,894	49.23
2-Door Sedans, Coaches, Coupes(1)	2,192,825	42.83
Business Coupes	82,355	1.61
"Hard Top" Coupes and Sedans	10,431	.20
Convertibles (Except "Hard Top")	215,635	4.21
Station Wagons(2)	88,410	1.73
Chassis	9,916	.19
Total	5,119,466	100.00
1948		
4-Door Sedans	1,968,946	50.37
2-Door Sedans, Coaches, Coupes(1)	1,554,687	39.77
Business Coupes	63,372	1.62
"Hard Top" Coupes and Sedans	.....	.....
Convertibles Except "Hard Top")	196,597	5.03
Station Wagons(2)	102,463	2.62
Chassis	23,205	.59
Total	3,909,270	100.00
1947		
4-Door Sedans	1,745,100	49.04
2-Door Sedans, Coaches, Coupes(1)	1,455,097	40.89
Business Coupes	82,944	2.33
"Hard Top" Coupes and Sedans	.....	.....
Convertibles (Except "Hard Top")	173,863	4.89
Station Wagons(2)	79,638	2.24
Chassis	21,536	.61
Total	3,558,178	100.00

(1)—Does not include Business Coupes.
(2)—Includes only station wagons produced on passenger car chassis.

Factory Sales of Special Types of Vehicles

Automobile Manufacturers Association

Vehicle Type	Units
1950	
Station Wagons(1)	123,028
Motor Coaches(2)	4,907
School Bus Chassis	19,953
Trucks with Cab-Over-Engine	22,370
Trucks with Diesel Engines	13,899
Trucks with 6 Wheels, 3 Axles	16,074
Multi-Stop Trucks	21,667
Ambulances and Funeral Vehicles	911
1949	
Station Wagons(1)	102,040
Motor Coaches(2)	5,511
School Bus Chassis	13,896
Trucks with Cab-Over-Engine	13,325
Trucks with Diesel Engines	6,047
Trucks with 6 Wheels, 3 Axles	4,122
Multi-Stop Trucks	19,479
Ambulances and Funeral Vehicles	2,853
1948	
Station Wagons(1)	110,312
Motor Coaches(2)	12,299
School Bus Chassis	23,755
Trucks with Cab-Over-Engine	31,047
Trucks with Diesel Engines	5,693
Trucks with 6 Wheels, 3 Axles	5,764
Multi-Stop Trucks	21,380
Ambulances and Funeral Vehicles	4,727
1947	
Station Wagons(1)	81,973
Motor Coaches(2)	19,110
School Bus Chassis	30,431
Trucks with Cab-Over-Engine	32,603
Trucks with Diesel Engines	6,209
Trucks with 6 Wheels, 3 Axles	.....
Multi-Stop Trucks	15,876
Ambulances and Funeral Vehicles	3,746

(1)—Includes those built on both passenger and truck chassis.
(2)—Does not include non-integral school buses.

Current Passenger Car Price, Weight and Body Table

Following are prices at factory for cars with standard equipment excluding the fifth tire and tube as of May 28, 1951. State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
BUICK				
Special 40				
Bus. Coupe, 2d	1707	124	1831	.....
Spt. Coupe, 2d	1759	127	1886	3570
Sedan, 2d	1790	129	1919	.....
Sedan, DeL., 2d	1831	132	1963	3585
Sedan, 4d	1841	132	1973	3575
Sed. DeL., 4d	1882	134	2016	3650
Sed. Rivra., 2d	1918	136	2054	3615
Conv. Cpe., 2d	2215	151	2366	3800
Super 50				
Sed. DeL., 2d	1929	146	2075	3655
Sed. Rivra., 2d	2024	152	2176	3735
Sed. DeL., 4d	2025	151	2176	3725
Sed. Rivra., 4d	2095	155	2250	3815
Conv. Cpe., 2d	2352	169	2521	3935
Estate Wag., 4d	2711	187	2898	4070
R'dmastr. 70				
Sed. Rivra., 4d	2616	198	2814	4210
Cpe. Rivra., 2d	2703	203	2906	4205
Conv. Cpe., 2d	2827	210	3037	4325
Estate Wag., 4d	3268	232	3500	4440
CADILLAC				
Series 62				
Coupe	3015	193	3208	4050
Sedan	3097	197	3294	4040
Cpe. de Ville	3379	212	3591	4120
Convertible	3507	218	3725	4340
Series 60				
Sedan	3635	236	3871	4200
Series 75				
Sedan, 8p	4585	296	4861	4690
Imperial	4749	305	5054	4710
CHEVROLET				
Styl. Spec. JJ				
Bus. Cpe., 2d	1260	90	1350	.....
Sedan, 2d	1331	94	1425	.....
Spt. Coupe, 2d	1337	94	1431	.....
Sedan, 4d	1378	97	1475	.....
Fltn. Spec. JJ				
Sedan, 2d	1331	94	1425	.....
Sedan, 4d	1378	97	1475	.....
Styl. DeL. JK				
Sedan, 2d	1408	99	1507	.....
Spt. Coupe	1424	100	1524	.....
Sedan, 4d	1455	101	1556	.....
Bel Air Coupe	1660	113	1773	.....
Conv. Coupe	1763	119	1882	.....
Stat. Wagon	1903	126	2029	.....
Fltn. DeL. JK				
Sedan, 2d	1408	99	1507	.....
Sedan, 4d	1455	101	1556	.....
CHRYSLER‡				
Windsor 6				
Club Coupe	2039	113	2152	3553
Sedan, 4d, 6p	2058	115	2173	3595
Twn. and Cty.	2643	145	2788	3933
Sedan, 4d, 8p	2758	152	2910	4110
Wind. DeL. 6				
Club Coupe	2228	123	2351	3668
Sedan, 4d, 6p	2249	124	2373	3743
Trav. Sed., 4d	2473	136	2609	3858
Newport	2548	140	2688	3823
Conv. Cpe.	2651	145	2796	3913
Sedan, 4d, 8p	2948	162	3110	4280
Limousine	3071	168	3239	4380
New Yorker 8				
Club Coupe	2889	158	3047	4110
Sedan, 4d, 6p	2915	160	3075	4225
Newport	3280	179	3459	4295
Conv. Coupe	3383	184	3567	4425
Twn. and Cty.	3479	189	3668	.....
Imperial 8				
Club Coupe	3165	173	3338	4195
Sedan, 4d	3176	173	3349	4300
Newport	3496	191	3687	4345
Conv. Coupe	3810	207	4017	4535
Crown Imp. 8				
Sedan, 4d, 8p	5703	295	5999	5315
Limousine	5805	301	6106	5405
CROSLEY				
Hotshot	809	63	872	1175
Sedan, DeL.	818	64	882	1363
Convertible	818	64	882	1320
Sta. Wagon	849	67	916	1403
Super Sports	859	66	925	.....
Sup. Sed., DeL.	883	68	951	.....
Sup. Conv.	886	68	954	.....
Sup. Sta. Wgn.	914	70	984	.....
DE SOTO‡				
De Luxe				
Club Coupe	.....	.....	.....	3443
Sedan, 4d, 6p	.....	.....	.....	3538
Carry-All	.....	.....	.....	3653
Sedan, 8p	.....	.....	.....	4010
Custom				
Club Coupe	.....	.....	.....	3553
Sedan, 4d, 6p	.....	.....	.....	3653
Sportsman	.....	.....	.....	3728
Convertible	.....	.....	.....	3808
Station Wagon	.....	.....	.....	3928
Sedan, 4d, 8p	.....	.....	.....	4120
Suburban	.....	.....	.....	4360
DODGE‡				
Wayfarer				
Coupe, 3p	.....	.....	.....	3099
Roadster, 3p	.....	.....	.....	3149
Sedan, 2d	.....	.....	.....	3189
Meadowbrk				
Sedan	.....	.....	.....	3387
Coronet				
Club Coupe	.....	.....	.....	3292
Sedan, 4d	.....	.....	.....	3387
Diplomat	.....	.....	.....	3487
Conv. Coupe	.....	.....	.....	3547
Sierra	.....	.....	.....	3720
Sedan, 4d, 8p	.....	.....	.....	3901
FORD				
De Luxe 6				
Bus. Coupe	1259	.....	.....	2965
Tudor	1348	.....	.....	3010
Fordor	1394	.....	.....	3080
Cust. DeL. 6				
Club Coupe	1432	.....	.....	3000
Tudor	1432	.....	.....	3010
Fordor	1478	.....	.....	3080
Station Wagon	1932	.....	.....	3515
De Luxe 8				
Bus. Coupe	1343	.....	.....	3005
Tudor	1420	.....	.....	3050
Fordor	1466	.....	.....	3120
Cust. DeL. 8				
Tudor	1509	.....	.....	3050
Club Coupe	1514	.....	.....	3040
Fordor	1555	.....	.....	3120
Victoria	1835	.....	.....	3160
Conv. Coupe	1858	.....	.....	3280
Station Wagon	2009	.....	.....	3555
FRAZER				
Sedan, 4d	2218	141	2359	3456
Vagabond	2256	143	2399	3556
Manhtn. Sed.	2889	186	3075	3771
Mhtn. Cv. Sd.	2889	186	3075	3941
HENRY J				
Sed. 2d, 4 cyl.	1241	82	1323	2293
Sed. 2d, 6 cyl.	1369	88	1457	2341
HUDSON				
Pacemaker 6				
Coupe, 3p	1806	141	1947	.....
Brougham	1936	149	2085	.....
Club Coupe	1977	151	2128	.....
Sedan, 4d	1977	151	2128	.....
Conv. Brghm.	2450	176	2626	.....
Super Six				
Brougham	2068	159	2227	.....
Club Coupe	2115	160	2275	.....
Sedan, 4d	2115	160	2275	.....
Conv. Brghm.	2624	189	2813	.....
Commodore 6				
Club Coupe	2270	168	2438	.....
Sedan, 4d	2293	170	2463	.....
Conv. Brghm.	2795	197	2992	.....
Hornet 6				
Club Coupe	2354	173	2527	.....
Sedan, 4d	2377	175	2552	.....
Conv. Brghm.	2879	202	3081	.....
Commodore 8				
Club Coupe	2354	173	2527	.....
Sedan, 4d	2377	175	2552	.....
Conv. Brghm.	2879	202	3081	.....
KAISER				
Special				
Bus. Coupe	1817	118	1935	3061
Sedan, 2d	1973	126	2099	3106
Sedan, 4d	2022	128	2150	3126
Traveler, 2d	2071	131	2202	3210
Traveler, 4d	2120	133	2283	3270
De Luxe				
Sedan, 2d	2081	131	2212	3151
Club Coupe	2100	133	2233	3111
Sedan, 4d	2129	134	2263	3171
Traveler, 2d	2178	137	2315	3285
Traveler, 4d	2227	139	2366	3345
LINCOLN				
Coupe, 6p	2399	.....	.....	4065
Spt. Sedan	2445	.....	.....	4130
Lido	2589	.....	.....	4100
Cosmopolitan				
Coupe, 6p	3039	.....	.....	4340
Spt. Sedan	3091	.....	.....	4415
Capri	3255	.....	.....	4360
Convertible, 6p	3783	.....	.....	4515
MERCURY				
Coupe, 6p	1884	.....	.....	3485
Spt. Sedan	1935	.....	.....	3550
Monterey	2048	.....	.....	3530
Monterey	2058	.....	.....	3530
Convertible	2305	.....	.....	3760
Station Wagon	2447	.....	.....	3800
NASH				
Rambler				
Suburban, 2d	1653	111	1764	2464
Convertible, 2d	1755	116	1871	2409
Stat. Wag., 2d	1755	116	1871	2494
Statesm'n DeL				
Bus. Coupe	1623	116	1739	2810
Stat'mn. Supr.				
Sedan, 2d	1700	121	1821	2905
Club Cpe., 2d	1723	121	1844	2910
Sedan, 4d	1726	121	1847	2945
Stat'mn Cust.				
Sedan, 2d	1854	130	1984	2915
Club Cpe., 2d	1877	130	2007	2925
Sedan, 4d	1880	130	2010	2965
Ambassador				
Super				
Sedan, 2d	2032	142	2174	3341
Club Cpe., 2d	2054	142	2196	3341
Sedan, 4d	2058	142	2200	3381
Custom				
Sedan, 2d	2186	151	2337	3351
Club Coupe	2208	151	2359	3386
Sedan, 4d	2212	151	2363	3416
OLDSMOBILE				
88				
Sedan, 2d	1815	137	1952	3507
Sedan, 4d	1872	140	2012	3542
Sed. DeL., 2d	1892	140	2032	.....
Sed. DeL., 4d	1949	144	2093	.....
Super 88				
Club Cpe., Del.	1928	143	2071	3557
Sed. DeL., 2d	1969	145	2114	3579
Sed. DeL., 4d	2026	147	2173	3636
Hol. Cpe., DeL.	2231	158	2389	3643
Cv. Cpe., DeL.	2334	164	2498	3831
98				
Holiday Cpe.	2267	161	2428	3762
Hol. Sed., DeL.	2277	161	2438	3787
Hol. Cpe., DeL.	2519	175	2694	3857
Cv. Cpe., DeL.	2644	181	2825	4107
PACKARD				
200-2401				
Bus. Coupe	2101	139	2240	3520
Club Sed., 2d	2209	143	2352	3570
Tour. Sed., 4d	2258	145	2403	3635
DeL. 200				
Club Sedan	2345	151	2496	3575
Tour. Sedan	2395	152	2547	3630
250-2401				
Cpe., Mayfr.	2956	193	3149	3787
Conv. Coupe	3101	202	3303	4007
300-2402				
PACKARD (Continued)				
Tour. Sed., 4d	2770	184	2954	3842
400-2406				
Tour. Sed., 4d	3351	218	3569	4082
PLYMOUTH				
Concord, P22				
Coupe, 3p	.....	.....	.....	2893
Sedan, 2d	.....	.....	.....	2943
Suburban	.....	.....	.....	3098
Savoy	.....	.....	.....	3158
Cam'dge, P23				
Club Coupe	.....	.....	.....	3033
Sedan, 4d	.....	.....	.....	3078
Cran'bk, P23				
Club Coupe	.....	.....	.....	3048
Sedan, 4d	.....	.....	.....	3083
Belvedere	.....	.....	.....	3156
Cv. Cb. Cpe.	.....	.....	.....	3268
PONTIAC				
Chieftain 6				
Bus. Coupe	1485	111	1596	3167
Sed. Coupe	1605	117	1722	3197
Sedan, 2d	1605	117	1722	3217
Sedan, 4d	1654	120	1774	3247
DeL. Sed. Cpe.	1698	122	1820	3202
DeL. Sed., 2d	1698	122	1820	3217
DeL. Sed., 4d	1747	125	1872	3247
DeL. Cata. Cpe.	1904	133	2037	3317
Sup. Cata. DeL.	1960	136	2096	3327
DeL. Conv. Cpe.	2022	140	2162	3462
Streamliner 6				
Sed. Coupe	1585	116	1701	3222
DeL. Sed. Cpe.	1677	121	1798	3237
Station Wagon	2157	147	2304	3575
DeL. St. Wag.	2234	151	2385	3495
Chieftain 8				
Bus. Coupe	1552	115	1667	3247
Sed. Coupe	1672	121	1793	3277
Sedan, 2d	1672	121	1793	3302
Sedan, 4d	1721	123	1844	3337
DeL. Sed. Cpe.	1764	126	1890	3292
DeL. Sed., 2d	1764	126	1890	3307
DeL. Sed., 4d	1814	128	1942	3347
DeL. Cata. Cpe.	1971	137	2108	3402
Sup. DeL. Cata.	2027	140	2167	3407
DeL. Conv. Cpe.	2089	143	2232	3542
Streamliner 8				
Sedan Coupe	1651	120	1771	3317
DeL. Sed. Cpe.	1744	125	1869	3322
Station Wagon	2223	150	2373	3670
DeL. Sta. Wag.	2300	154	2454	3600
STUDEBAKER				
Champ. Cust.				
Coupe, 3p	1359	.....	.....	2562
Sed., 2d, 6p	1424	.....	.....	2647
Coupe, 5p	1449	.....	.....	2627
Sed., 4d, 6p	1454	.....	.....	2667
Champ. DeL.				
Coupe, 3p	1434	.....	.....	2587
Sed., 2d, 6p	1499	.....	.....	2667
Coupe, 5p	1524	.....	.....	2652
Sed., 4d, 6p	1529	.....	.....	2692
Champ. Regal				
Coupe, 3p	1509	.....	.....	2592
Sed., 2d, 6p	1574	.....	.....	2667
Coupe, 5p	1599	.....	.....	2652
Sed., 4d, 6p	1604	.....	.....	2697
Convertible	1894	.....	.....	2867
Commander				
Regal				
Sed., 2d, 6p	1671	.....	.....	3017
Coupe, 5p	1696	.....	.....	3002
Sed., 4d, 6p	1701	.....	.....	3037
State				
Sed., 2d, 6p	1766	.....	.....	3017
Coupe, 5p	1791	.....	.....	3002
Sed., 4d, 6p	1796	.....	.....	3042
Land Cruiser	1921	.....	.....	3137
Convertible	2086	.....	.....	3212
WILLYS				
Jeepster, 4 cyl.	1290	53	1343	2459
Jeepster, 6 cyl.	1490	82	1572	2485
Sta. Wgn., 4 cyl.	1590	88	1678	2818
Sta. Wgn., 6 cyl.	1665	92	1757	2831
Sta. Wgn., 4WD	1990	92	2082	3174

‡ Prices do not include delivery and handling charges.

PASSENGER CAR ENGINE TRENDS

(Averages for Passenger Cars and Their Engines—Based on Sales)

	No. of Units Sold*	Gross Shipping Wgt. of Cars Sold (lb)†	Gross Max. Hp of Cars Sold‡	Average Weight (lb)	Average Hp
1930	2,625,979	7,320,000,000	142,800,000	2,780	54
1931	1,908,141	5,380,000,000	109,200,000	2,820	57
1932	1,096,399	3,200,000,000	75,400,000	2,920	69
1933	1,493,794	4,220,000,000	106,000,000	2,820	71
1934	1,888,557	5,560,000,000	156,000,000	2,940	83
1935	2,743,908	8,120,000,000	234,000,000	2,960	85
1936	3,404,497	10,190,000,000	291,000,000	3,000	86
1937	3,483,752	10,470,000,000	303,900,000	3,005	87
1938	1,891,021	5,743,000,000	169,200,000	3,035	89
1939	2,653,377	7,950,000,000	239,200,000	2,996	90
1940	3,415,905	10,511,000,000	312,100,000	3,077	91
1941	3,731,166	11,793,000,000	356,800,000	3,161	96
1946	1,815,196	599,600,000	181,200,000	3,303	100
1947	3,167,231	10,528,700,000	317,400,000	3,324	100
1948	3,490,952	11,552,200,000	352,600,000	3,309	100
1949	4,838,342	15,901,000,000	500,100,000	3,286	104
1950	6,326,438	20,624,200,000	660,400,000	3,260	104

†—Shipping weight of 5 passenger, 4 door sedan taken as typical and used in conjunction with new registrations of each model.

‡—Maximum horsepower taken from previous Statistical Issues and used in conjunction with new registrations of each model. *—R. L. Polk & Co. registrations of new passenger cars.

Progress in Engine Design

(Average for Passenger Car Engines—Based on Number of Chassis Models Offered)

Average Hp per Cu. In. of Displacement	Average Compression Ratio	Average B. M. E. P. at Maximum Hp. (lb. per sq. in.)	Bore, Stroke and Displacement		
			Bore (In.)	Stroke (In.)	Disp. (Cu. In.)
1930 .331	1930 5.15	1930 82.7	1930 3.26	4.51	264.6
1931 .344	1931 5.23	1931 84.3	1931 3.21	4.45	273.0
1932 .353	1932 5.29	1932 86.2	1932 3.26	4.41	283.9
1933 .376	1933 5.57	1933 88.5	1933 3.23	4.40	284.1
1934 .388	1934 5.72	1934 90.1	1934 3.24	4.40	289.2
1935 .398	1935 5.98	1935 90.2	1935 3.23	4.39	271.4
1936 .411	1936 6.14	1936 92.3	1936 3.39	4.32	267.9
1937 .417	1937 6.25	1937 93.1	1937 3.25	4.31	277.6
1938 .412	1938 6.32	1938 91.2	1938 3.25	4.27	271.1
1939 .415	1939 6.32	1939 92.7	1939 3.24	4.23	255.3
1940 .426	1940 6.41	1940 93.9	1940 3.25	4.17	254.0
1941 .431	1941 6.63	1941 96.7	1941 3.26	4.15	252.1
1942 .446	1942 6.60	1942 98.5	1942 3.26	4.18	251.8
1946 .440	1946 6.77	1946 94.6	1946 3.27	4.11	246.4
1947 .437	1947 6.73	1947 94.5	1947 3.28	4.18	250.4
1948 .437	1948 6.78	1948 95.3	1948 3.29	4.12	247.1
1949 .453	1949 6.93	1949 97.3	1949 3.35	4.10	250.0
1950 .455	1950 7.00	1950 98.6	1950 3.37	4.11	256.1
1951 .474	1951 7.09	1951 99.5	1951 3.40	4.00	250.4

Average Piston Speeds (Ft. per Min.)	Average Disp. per Cylinder (Cu. In.)	Average Number of Cylinders	Average R.P.M. at Max. B.H.P.	Average Brake Horsepower
1930 2380	1930 37.6	1930 7.04	1930 3170	1930 87.6
1931 2395	1931 36.8	1931 7.49	1931 3230	1931 95.0
1932 2390	1932 36.7	1932 7.78	1932 3250	1932 101.0
1933 2463	1933 36.0	1933 7.88	1933 3360	1933 106.5
1934 2508	1934 36.2	1934 7.97	1934 3420	1934 112.5
1935 2535	1935 36.1	1935 7.51	1935 3480	1935 109.6
1936 2498	1936 35.6	1936 7.50	1936 3487	1936 110.1
1937 2554	1937 35.8	1937 7.74	1937 3556	1937 115.9
1938 2545	1938 35.7	1938 7.60	1938 3576	1938 111.7
1939 2498	1939 35.1	1939 7.28	1939 3543	1939 105.9
1940 2490	1940 35.0	1940 7.25	1940 3580	1940 107.9
1941 2492	1941 35.2	1941 7.15	1941 3603	1941 110.9
1942 2534	1942 34.9	1942 7.20	1942 3638	1942 112.5
1946 2522	1946 35.4	1946 6.97	1946 3682	1946 108.4
1947 2550	1947 35.8	1947 7.00	1947 3660	1947 109.4
1948 2492	1948 35.6	1948 6.95	1948 3629	1948 107.9
1949 2522	1949 36.8	1949 6.80	1949 3690	1949 113.3
1950 2505	1950 37.2	1950 6.88	1950 3657	1950 116.6
1951 2505	1951 36.8	1951 6.80	1951 3758	1951 118.0

U. S. SMALL

MAKE AND MODEL	Designed for Use	Number of Cycles	ENGINE										GOV-ERNOR		Ignition System Type	FUEL SYSTEM		Fuel Used	Starting Method
			Type	No. of Cylinders	Bore and Stroke (In.)	Total Displacement (Cu. In.)	Compression Ratio (to—1)	Valve Location	Horsepower Rated at RPM	Horsepower Continuous at RPM	Torque—Lb. Ft. at RPM	Weight (Lb.)	Used	Type		Type	Make		
AIR COOLED																			
Brigge & Stratton.....5S	General Purpose	4	Ver	1	2x1½	4.71	5.29	L	1.0-3200	.85-3200	1.6-3200	30	Y	Av	Mag	MV	Own	G	Rr
.....6S	General Purpose	4	Ver	1	2x2	6.28	5.86	L	1.6-3200	1.4-3200	2.6-3200	33	Y	Av	Mag	MV	Own	G	Rr
.....6HSF	Lm	4	Hor	1	2x2	6.28	5.86	L	1.6-3200	1.4-3200	2.6-3200	38	Y	Av	Mag	MV	Own	G	R
.....N	General Purpose	4	Ver	1	2x2	6.28	5.86	L	2.0-3600	1.7-3600	2.9-3600	33	Y	MA	Mag	Car	Own	G	Rr
.....6HF	Lm	4	Hor	1	2x2	6.28	5.86	L	2.0-3600	1.7-3600	2.9-3600	39	Y	Av	Mag	Car	Own	G	R
.....8	General Purpose	4	Ver	1	2¼x2	7.95	5.40	L	2.5-3600	2.1-3600	3.7-3600	38	Y	MA	Mag	Car	Own	G	Rr
.....8HF	Lm	4	Hor	1	2¼x2	7.95	5.40	L	2.5-3600	2.1-3600	3.7-3600	42	Y	Av	Mag	Car	Own	G	R
.....9	General Purpose	4	Ver	1	2¼x2¼	8.95	5.40	L	3.1-3200	2.6-3200	5.1-3200	61	Y	Me	Mag	Car	Own	G	HR
.....14	General Purpose	4	Ver	1	2⅝x2⅝	14.21	5.40	L	5.1-3200	4.3-3200	8.4-3200	76	Y	Me	Mag	Car	Own	G	HR
.....23	General Purpose	4	Ver	1	3x3¼	22.97	5.40	L	8.2-3200	7.0-3200	13.5-3200	98	Y	Me	Mag	Car	Own	G	HR
Clinton 350	General Purpose	4	Ver	1	2x1½	4.71	5.20	L	1.1-3600	1.0-3200	1.5-3600	27	Y	Av	Mag	MV	Own	G	Rr
.....A300	General Purpose	4	Ver	1	2x1½	4.71	5.20	L	1.3-3600	1.2-3200	1.9-3600	29	Y	Av	Mag	Car	Cart	G	Rr
.....VS300	General Purpose	4	Hor	1	2x1½	4.71	5.20	L	1.3-3600	1.2-3200	1.9-3600	35	Y	Av	Mag	Car	Cart	G	Rr
.....650	General Purpose	4	Ver	1	2x1⅞	5.89	5.60	L	1.6-3600	1.5-3200	2.3-3600	35	Y	Av	Mag	MV	Own	G	Rr
.....B700	General Purpose	4	Ver	1	2x1⅞	5.89	5.60	L	2.0-3600	1.8-3200	2.9-3600	36	Y	Me	Mag	Car	Cart	G	Rr
.....VS700	General Purpose	4	Hor	1	2x1⅞	5.89	5.60	L	2.0-3600	.....	2.9-3600	36	Y	Av	Mag	Car	Cart	G	Rr
.....C1100	General Purpose	4	Ver	1	2⅝x1⅞	8.30	6.20	L	3.0-3600	2.9-3200	4.4-3600	42	Y	Me	Mag	Car	Cart	G	Rr
Continental.....AA7	General Purpose	4	(a)	1	2⅛x2	7.10	5.70	L	1.6-2800	1.5-2600	3.03-2800	41	Y	Av	Mag	Car	Zen	G	PBR
.....AA7B	General Purpose	4	(a)	1	2⅛x2	7.10	6.00	L	2.18-3600	2.0-3400	3.0-3400	41	Y	Av	Mag	Car	Zen	G	PBR
.....AU7	General Purpose	4	(a)	1	2⅛x2	7.10	5.70	L	1.6-2800	1.5-2600	3.03-2600	41	Y	Av	Mag	Car	Zen	G	PBR
.....AU7B	General Purpose	4	(a)	1	2⅛x2	7.10	6.00	L	2.18-3600	2.0-3400	3.0-3400	41	Y	Av	Mag	Car	Zen	G	PBR
.....AW-7	Lm	4	(b)	1	2⅛x2	7.10	5.70	L	1.6-2800	1.5-2600	3.03-2600	41	Y	Av	Mag	Car	Zen	G	BR
.....AW-7B	Lm	4	(b)	1	2⅛x2	7.10	6.00	L	2.18-3600	2.0-3400	3.0-3400	41	Y	Av	Mag	Car	Zen	G	BR
.....AC-6	General Purpose	4	(a)	1	2⅛x2	7.10	5.70	L	1.6-3200	1.5-3000	2.9-2000	37	Y	Av	Mag	MV	Own	G	BR
.....AC-5	General Purpose	4	(a)	1	2⅛x2	7.10	5.70	L	1.1-2800	1.0-2600	2.15-1800	37	Y	Av	Mag	MV	Own	G	Rc
Cushman.....Husky-M6	General Purpose	4	Ver	1	2⅝x2¾	12.30	4.70	L	3.0-3000	2.6-3000	5.2-2000	65	Y	Fb	Mag	Car	Til	G	Rr
.....Husky-M7	General Purpose	4	Ver	1	2⅝x2¾	14.90	5.40	L	4.5-3000	3.8-3000	7.9-2000	65	Y	Fb	Mag	Car	Til	G	Rr
.....Husky-M8	General Purpose	4	Ver	1	2⅞x2¾	17.80	5.90	L	5.0-3000	4.3-3000	9.5-2000	65	Y	Fb	Mag	Car	Til	G	Rr
Gladden.....40	General Purpose	4	Ver	1	2½x3	14.70	4.50	L	4.3-3200	4.3-3200	8.4-2200	79	Y	Fb	Mag	Car	MS	G,K	Rr
.....40M	Marine	4	Ver	1	2½x3	14.70	4.50	L	4.3-3200	4.3-3200	8.4-2200	80	Y	Fb	Mag	Car	MS	G	Rr
.....AB	General Purpose	4	Hor	1	2¾x3	17.80	5.40	L	5.0-2600	5.0-2600	9.5-2500	68	Y	Av	Mag	Car	MS	G,K	Rr
.....50	General Purpose	4	Ver	1	2½x3	14.70	5.70	L	5.25-3200	5.25-3200	9.2-2500	81	Y	Fb	Mag	Car	MS	G	Rr
.....75	General Purpose	4	Ver	1	2⅞x3	19.40	5.70	L	7.0-3200	7.0-3200	13.5-2200	83	Y	Fb	Mag	Car	MS	G,K	Rr
.....75ES	General Purpose	4	Ver	1	2⅞x3	19.40	5.70	L	6.5-3200	6.5-3200	11.8-3200	136	N	.....	Bat	Car	MS	G	Ele
.....75M	Marine	4	Ver	1	2⅞x3	19.40	5.70	L	7.0-3200	7.0-3200	11.8-3200	86	N	.....	Mag	Car	MS	G	Rr
.....75MES	Marine	4	Ver	1	2⅞x3	19.40	5.70	L	6.5-3200	6.5-3200	11.0-3200	138	N	.....	Bat	Car	MS	G	Ele
.....MC	Motorcycle	4	Ver	1	2⅞x3	19.40	7.00	L	9.0-4000	7.0-3000	12.3-3000	65	N	.....	Mag	Car	Am	G	Pe
Homelite.....20	GS,Pu,Cs,Bl	2	Ver	1	2⅜x1½	6.70	5.50	(e)	3.5-3600	3.5-3600	.....	20	Y	Va	Mag	Car	Til	G,K	Hc
.....23	GS,Pu,Bl	2	Ver	1	2¼x2⅛	8.40	5.50	(e)	4.0-3600	4.0-3600	.....	30	Y	Va	Mag	Car	Own	G,K	Hc
.....24	General Purpose	2	Ver	1	2⅝x2¼	11.40	5.50	(e)	6.0-3600	6.0-3600	.....	40	Y	Va	Mag	Car	OZ	G,K	Hc
.....25	GS,Pu,CS,Bl	2	Hor	2	2⅝x2⅛	22.80	5.50	(e)	10.0-3600	10.0-3600	.....	55	Y	Va	Mag	Car	Own	G,K	Hc
Jacobs.....O-60	GS,Co,Pu,Af	4	Hor	2	3½x3	57.7	5.60	L	15.0-2400	15-2400	35-2100	150	Y	Fb	Mag	Car	Zen	G	HP
Jacobsen.....J100	Lm	2	Hor	1	2x1½	4.70	5.50	....	1.50-3600	1.50-3600	2.20-3600	19½	Y	Av	Mag	Car	Til	G	Rr
.....J150	Lm	2	Hor	1	2¼x1¾	6.90	5.00	....	1.75-3000	1.75-3000	3.00-3000	35½	Y	Av	Mag	Car	Til	G	Rr
Lauson.....LMH	GS,Lm	4	Ver	1	1⅝x1½	3.11	5.90	L	1.05-3800	.75-3800	1.52-3800	22	Y	Fb	Mag	Car	Til	G	R
.....RSH	GS,Co,Pu,Re	4	Ver	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	28	Y	Fb	Mag	Car	Til	G	R
.....TLH	GS,Co,Pu,Re	4	Ver	1	2¼x2¼	8.94	5.80	L	3.00-3200	2.50-3200	4.70-3200	52	Y	Fb	Mag	Car	Til	G	R
.....PAH	General Purpose	4	Ver	1	2⅞x2⅝	17.85	5.00	L	5.50-3000	4.50-3000	9.50-2700	85	Y	Fb	Mag	Car	Til	G	R
.....TLV	Lm	4	Hor	1	2¼x2¼	8.94	5.80	L	3.00-3200	2.50-3200	4.70-3200	58	Y	Fb	Mag	Car	Til	G	R
.....55SV300	Lm	4	Hor	1	2x1⅞	5.90	5.80	L	1.60-3200	1.35-3200	2.70-3200	33	Y	Fb	Mag	MV	Own	G	R
.....RSV800	Lm	4	Hor	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	33	Y	Fb	Mag	Car	Til	G	R
.....55S100	Lm	4	Ver	1	2x1⅞	5.90	5.80	L	1.60-3200	1.35-3200	2.70-3200	33	Y	Fb	Mag	MV	Own	G	R
.....55A, 55AB	General Purpose	4	Ver	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	(c)	Y	Fb	Mag	Car	Til	G	R
McCulloch.....19	GS	2	Hor	1	2x1½	4.71	7.00	....	3.10-4200	2.6-3800	3.78-4000	21	N	.....	Mag	Car	Own	G	Rc
.....2100	GS,Pu,Af,Lm	2	Hor	1	2x1½	4.71	5.90	....	1.50-3600	1.25-3200	2.20-3000	17	Y	Me	Mag	Car	Own	G	Rc
.....3-25	CS,Af	2	Ver	1	2x1½	4.71	6.40	....	3.00-4200	2.50-3600	4.60-3000	25	N	.....	Mag	Car	Own	G	Rc
.....1200D	Lm,Pu	2	Hor	1	2x2	6.28	6.70	....	3.00-3500	2.5-2500	5.10-2500	24	Y	Pn	Mag	Car	Til	G	Bp
.....1225B	CS,Pu	2	Hor	1	2¼x2	7.95	6.50	....	5.10-4200	4.4-3200	6.30-3000	25	N	.....	Mag	Car	Own	G	Rc
Novo.....DA33	General Purpose	4	Ver	1	3¼x4	33.10	5.80	L	8.50-2800	6.8-2800	18.6-1600	185	Y	Fb	Mag	Car	MS	G	Hc
.....CWR66	General Purpose	4	Ver	2	3¼x4	66.40	6.00	L	15.0-2200	12.0-2200	46.0-1200	335	Y	Fb	Mag	Car	ZEM	NgG	HE
.....CWR133	General Purpose	4	Ver	4	3¼x4	132.80	6.00	L	32.0-1200	25.6-1200	98.0-1200	505	Y	Fb	Mag	Car	ZEM	NgG	HE
.....BA23	General Purpose	4	Ver	1	2⅞x3½	22.70	6.00	L	7.00-3000	5.6-3000	15.2-1800	150	Y	Fb	Mag	Car	ZEM	G	HR
Onan.....AAE	GS	4	Ver	1	2x2	6.28	5.50	L	.80-2100	.60-2100	2.0-2100	†76	Y	‡	Bat	Car	Zen	G	ER
.....AH	GS,In	4	Ver	1	2½x2¼	11.05	6.23	L	3.3-3000	2.6-3000	6.0-3000	55	Y	‡	BM	Car	Zen	G	ER
.....Com-1B	In	4	Ver	1	2¾x2¾	16.30	4.10	L	3.45-2400	2.7-2400	7.1-2400	124	Y	‡	Mag	Car	Zen	NgG	ER
.....1B	GS	4	Ver	1	2¾x2¾	16.30	4.80	....	2.50-1800	2.5-1800	7.3-1800	†177	Y	‡	Mag	Car	Zen	NgG	Rr
.....BH	GS,In	4	Op	2	2½x2¼	22.10	6.23	....	6.70-3000	5.3-3000	12.0-3000	85	Y	‡	BM	Car	MS	G	ER
.....CK	General Purpose	4	Op	2	3x2⅝	38.80	6.20	L	10.1-3000	8.6-3000	18.0-3000	95	Y	‡	BM	Car	MS	NgG	ER
.....LK	GS,In	4	Ver	1	3x2¼	19.40	5.80	L	4.5-3000	4.0-3000	10.0-1800	....	Y	Ce	BM	Car	Zen	G	HE
Reo.....552-556	Lm	4	Ver	1	2x1¾	5.50	6.22	L	1.5-3600	1.2-3000	2.35-2400	29	Y	Av	Mag	Car	Cart	G	HR
..211E, 338E, 400E, 410E	Lm	4	▲	1	2x1¾	5.50	6.22	L	1.75-4000	1.40-3400	2.32-2400	29	Y	Av	Mag	Car	Cart	G	Hc
.....404E, 420E	Lm	4	▲	1	2x1¾	5.50	6.22	L	1.25-3000	1.10-2500	2.20-3000	27	Y	Av	Mag	MV	Own	G	Hc
Salsbury.....600	General Purpose	4	▲	1	3x2⅝	19.40	.....	I	6.5-3200	3.50-2400	.....	72	Y	Ce	Mag	Car	MS	G	Pe
Ultimotor.....U200	General Purpose	4	Ver	1	2¼x2¼	8.94	5.88	I	3.0-3000	2.5-2600	4.9-2500	43	Y	Fb	Mag	Car	MS	G	Rr
.....12	General Purpose	4	Ver	1	2x2¼	7.07	6.13	I	2.0-3000	1.5-2200	3.7-2400	38	Y	Fb	Mag	Car	Zen	G	Hc
.....U23	General Purpose	4	Ver	1	2¼x2¼	8.94	5.88	I	3.10-3000	2.50-2500	5.50-3000	43	Y	Fb	Mag	Car	Zen	G	Hc

GASOLINE ENGINES

MAKE AND MODEL	Designed for Use	ENGINE: Number of Cycles	Type	No. of Cylinders	Bore and Stroke (In.)	Total Displacement (Cu. In.)	Compression Ratio (to —1)	Valve Location	Horsepower: Rated at RPM	Horsepower: Continuous at RPM	Torque—Lb. Ft. at RPM	Weight (Lb.)	GOVERNOR: Used	GOVERNOR: Type	Ignition System Type	FUEL SYSTEM: Type	FUEL SYSTEM: Make	Fuel Used	Starting Method
AIR COOLED—Continued																			
United.....1½ H.P.	General Purpose	4	Ver	1	2⅝x2½	11.08	.....	L	.....	.....	.....	70	Y	.....	Mag	Car	Til	G	Pe
.....2 H.P.	General Purpose	4	Ver	1	2⅝x2½	13.53	.....	L	.....	.....	.....	70	Y	.....	Mag	Car	Til	G	Pe
.....4 H.P.	General Purpose	4	Ver	1	2⅝x2½	14.89	.....	L	.....	.....	.....	75	Y	.....	Mag	Car	Til	G	Pe
Wisconsin.....ABN	General Purpose	4	Ver	1	2½x2⅝	13.50	5.65	L	4.6-3600	3.7-3600	7.5-2400	77	Y	Ce	Mag	Car	MS	G	Bp
.....AKN	General Purpose	4	Ver	1	2⅞x2⅝	17.80	5.13	L	6.0-3600	4.8-3600	10.4-2400	77	Y	Ce	Mag	Car	MS	G	Bp
.....AEH	General Purpose	4	Ver	1	3x3½	23.00	4.90	L	6.1-2600	4.9-2600	13.0-2000	130	Y	Ce	Mag	Car	Zen	G	Bp
.....AEN	General Purpose	4	Ver	1	3x3¼	23.00	5.00	....	7.5-3000	6.0-3000	15.4-2200	110	Y	Ce	Mag	Car	Zen	G	Bp
.....AFH	General Purpose	4	Ver	1	3¼x4	33.20	4.60	L	7.2-2200	5.75-2200	19.8-1400	180	Y	Ce	Mag	Car	Zen	G	Hc
.....AGH	General Purpose	4	Ver	1	3½x4	38.50	4.60	L	8.4-2200	6.7-2200	24.2-1400	180	Y	Ce	Mag	Car	Zen	G	Hc
.....AHH	General Purpose	4	Ver	1	3⅝x4	41.30	4.60	L	9.2-2200	7.4-2200	25.8-1300	180	Y	Ce	Mag	Car	Zen	G	Hc
.....TE	GS,Co,Pu,Af	4	Ver	2	3x3¼	45.90	4.50	L	11.2-2600	9.0-2600	27.1-1600	220	Y	Ce	Mag	Car	Zen	G	Hc
.....TF	General Purpose	4	Ver	2	3¼x3¼	53.90	4.67	L	13.3-2600	10.6-2600	32.0-1600	220	Y	Ce	Mag	Car	Zen	G	Hc
.....VE4	General Purpose	4	Vee	4	3x3¼	91.90	4.60	L	22.0-2600	17.6-2600	50.0-1600	295	Y	Ce	Mag	Car	Zen	G	Hc
.....VF4	General Purpose	4	Vee	4	3¼x3¼	107.70	4.60	L	25.0-2400	20.0-2400	56.2-1600	295	Y	Ce	Mag	Car	Zen	G	Hc
.....VP4	General Purpose	4	Vee	4	3½x4	154.00	4.67	L	31.0-2200	24.8-2200	88.0-1400	410	Y	Ce	Mag	Car	MS	G	Hc
WATER COOLED																			
Cushman.....Cub R-14	General Purpose	4	Hor	1	3¼x4½	37.33	4.50	L	3.0-850	3.0-850	18.4-600	195	Y	Fb	Mag	MV	Own	G,K,Ng	Hc
.....Cub R-20	General Purpose	4	Hor	1	3½x4½	43.29	4.10	L	3.7-850	3.7-850	22.5-700	235	Y	Fb	Mag	MV	Own	G,K,Ng	Hc
.....Cub R-30	General Purpose	4	Hor	1	3⅝x4½	49.70	4.64	L	4.5-850	4.5-850	28.4-800	245	Y	Fb	Mag	MV	Own	G,K,Ng	Hc
.....Cub R-40	General Purpose	4	Hor	1	4x4½	56.50	5.10	L	5.4-850	5.4-850	35.0-800	255	Y	Fb	Mag	MV	Own	G,K,Ng	Hc
Kermath.....	Tr,In,M	4	Ver	1	2⅝x2⅝	14.20	5.00	L	5-3200	.....	10-2700	62	Y	.....	Mag	Car	Zen	G	ER
.....	Tr,In,M	4	Ver	2	2⅝x2⅝	28.40	5.00	L	10-3200	.....	19-2700	86	Y	.....	Mag	Car	Zen	G	ER
Le Roi.....B45	General Purpose	4	Ver	2	2⅞x3½	45.40	5.80	L	10.4-2200	8.3-2000	28.0-1400	450	Y	Fb	BM	CM	ZE	G,D,Ng	HE
.....D91	General Purpose	4	Ver	4	2⅞x3½	90.80	5.80	L	22.0-2200	17.0-2000	60.0-1500	510	Y	Fb	BM	CM	ZE	G,D,Ng	HE
.....D140	General Purpose	4	Ver	4	3½x3⅝	140.00	5.85	I	33.5-2400	26.5-2200	94.0-1300	650	Y	Fb	BM	CM	ZE	G,D,Ng	HE
Onan.....W3M or S	GS	4	Ver	2	3x2¾	38.80	5.50	....	7.1-1800	7.1-1800	20.4-1850	†450	Y	‡	BM	Car	Zen	G,D,Ng	HE
United.....2R14	Af	4	Hor	1	3¼x4½	37.30	.....	L	.....	.....	.....	195	Y	(d)	Mag	Car	Til	G,K,D	Hc
.....3R20	Af	4	Hor	1	3½x4½	43.25	.....	L	.....	.....	.....	235	Y	(d)	Mag	Car	Til	G,K,D	Hc
.....4R30	Af	4	Hor	1	3¾x4½	49.75	.....	L	.....	.....	.....	245	Y	(d)	Mag	Car	Til	G,K,D	Hc
Universal.....AFTC	GS	4	Ver	2	3x3½	49.50	5.79	L	5.0-1200	6.0-1350	25.0-1200	385	Y	Me	BM	Car	Str	G	HE
.....AFC	GS,In	4	Ver	4	3x3½	99.00	5.79	L	19.0-1800	18.0-1800	53.0-1800	....	Y	Me	BM	Car	Str	G,Ng	HE

ABBREVIATIONS

*—Cylinder 45° from horizontal.
†—Weight includes generator.
‡—Flyweights on camshaft.
(a)—Inclined 20° up from horizontal.
(b)—Vertical shaft engine.
(c)—55A—33 lb.; 55AB—28 lb.
(d)—Automatic—controlled by flywheel.
(e)—Rotary intake valve in crankcase.
Af—Auxiliary farm implement equipment.
Am—Amal.
Av—Air vane.
Bat—Battery.
Bl—Blowers.
BM—Battery and magneto.
Bp—Belt or pulley.
BR—Belt, pulley, or recoil.
Car—Carburetor.
Cart—Carter Carburetor Corp.
Ce—Centrifugal.
CM—Carburetor or mixing valve.
Co—Air compressor.
CS—Chain saws.
D—Distillate.
Ele—Electric.
ER—Electric or rope.
Fb—Flyball.
G—Gasoline.
GS—Generator sets.
Hc—Hand crank.
HE—Hand crank or electric.
Hor—Horizontal.
HP—Hand crank, belt or pulley.
HR—Hand crank or rope.
I—In head.
In—Industrial.
K—Kerosene.
L—"L" head.
Lm—Lawn mowers.
MA—Mechanical or air vane.
Mag—Magneto.
M—Marine.
Me—Mechanical.
MS—Marvel-Schebler Carburetor Div.
MV—Mixing valve.
N—No or none.
Ng—Natural gas.
NgG—Combination gas and gasoline.
Op—Opposed.
OZ—Own and Zenith.
PBR—Pedal, belt, pulley, or recoil.
Pe—Pedal.
Pl—Pulley.
Pn—Pneumatic.
Pu—Pumps.
R—Rope.
Rc—Recoil.
Re—Refrigerating equipment.
Rr—Recoil or rope.
Str—Stromberg Carburetor Div.
Til—Tillotsen Mfg. Co.
Tr—Tractors.
Va—Valve.
Ver—Verticle.
Y—Yes.
ZE—Zenith carburetor—Ensign mixing valve.
ZEM—Zenith carburetor—Ensign mixing valve, or Marvel-Schebler carburetor.
Zen—Zenith Carburetor Div.

Shipments of Car, Truck and Bus Tires*

	Original Equipment	Replacement	Export	Total	Production	Inventory
Passenger Car Casings						
1950	36,683,934	47,320,762	652,983	84,657,679	78,621,811	3,032,539
1949	28,128,583	36,439,572	508,565	65,076,720	65,140,287	8,903,731
1948	21,539,040	41,295,434	655,686	63,540,160	66,738,436	8,772,822
1947	19,644,143	52,857,228	1,608,082	74,109,453	77,795,299	5,444,071
1946	11,036,542	54,684,036	652,643	66,423,221	66,466,319	1,763,472
Truck and Bus Casings						
1950	4,665,943	9,730,014	771,901	15,167,858	14,127,791	737,190
1949	3,455,781	7,026,115	958,420	11,440,316	11,228,440	1,734,456
1948	5,256,413	7,852,377	1,131,812	14,241,102	14,575,981	1,925,408
1947	5,411,521	10,013,994	1,648,396	17,073,911	17,754,837	1,506,231
1946	4,223,610	10,806,211	859,369	15,889,190	15,831,862	684,800
Total Automotive Casings						
1950	41,349,877	57,050,776	1,424,884	99,825,537	92,749,602	3,769,729
1949	31,584,364	43,465,687	1,466,985	76,517,036	76,368,727	10,638,187
1948	26,845,453	49,148,311	1,787,498	77,781,262	81,314,417	10,698,225
1947	25,055,664	62,871,222	3,256,478	91,183,364	95,550,136	6,949,292
1946	15,310,152	65,490,247	1,512,012	82,312,411	82,298,181	2,448,272

* Rubber Manufacturers Association, Inc.

U. S. OUTBOARD MOTORS

MAKE AND MODEL	Power Head	Number of Cylinders	Cylinder Material	Bore and Stroke (In.)	Piston Displacement (Cu. In.)	Engine Type	Brake Hp. at R.P.M. O.B.C. Rating	Engine Weight (Lb.) Fully Equipped	Piston Rings—Number and Width	Propeller: Diameter (In.)	Propeller: Pitch	Propeller: Right or Left Hand Rotation	Propeller: Number of Blades	Starting Device	Fuel Tank Capacity (Pts.)	Gear: Ratio	Gear: Tooth Pitch	Gear: Material (S.A.E. No.)	Gearcase Bearing	Magneto Make	Carburetor: Make	Carburetor: Size (In.)	Carburetor: Starting Mixture Obtained by—	Spark Plug—Make and Model	Bearings: Main	Bearings: Connecting Rod	Cooling System	Reverse	Lubrication—Pints Oil to 1 Gal. Gasoline
Atlas-Royal 5D10A	Re-2 Port	2	ACS	1 1/16 x 1 1/2	8.84	AF	5.0-4000	46 1/2	3-3/32	8	7 1/4	L	2	RR	6 1/2	14-25	12.00	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Ce	Yes	1/2
12D10A	Re-2 Port	2	ACS	2 5/8 x 2 1/4	19.94	AF	12.0-4000	64 1/2	3-3/32	9	10	L	3	RR	12	12-21	8.97	4615	PA	Own	Tll	5/8	C	Ch-J6J	Pl	Pl	Ce	Yes†	1
Brooklure 230-51-3S	Re-2 Port	1	ACS	2 1/16 x 1 1/2	5.32	S	3.0-4000	28	2-3/32	6 1/2	V	L	2	Cord	4	13-22	13.56	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Rot	Yes	1/2
230-51-3D	Re-2 Port	1	ACS	2 1/16 x 1 1/2	5.32	S	3.0-4000	29	2-3/32	6 1/2	V	L	2	RR	4	13-22	13.56	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Rot	Yes	1/2
230-51-5S	Re-2 Port	2	ACS	1 1/16 x 1 1/2	8.84	AF	5.0-4000	45	3-3/32	7 1/2	7 1/4	L	2	RR	6 1/2	13-20	10.83	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Rot	Yes	1/2
230-51-5D	Re-2 Port	2	ACS	1 1/16 x 1 1/2	8.84	AF	5.0-4000	46 1/2	3-3/32	8	7 1/4	L	2	RR	6 1/2	14-25	12.00	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Ce	Yes	1/2
230-51-12S	Re-2 Port	2	ACS	2 5/8 x 2 1/4	19.94	AF	12.0-4000	66	3-3/32	9 1/4	V	L	2	RR	12	13-19	8.00	4615	Pl	Own	Tll	5/8	C	Ch-J6J	Pl	Pl	Rot	No	1
230-51-12D	Re-2 Port	2	ACS	2 5/8 x 2 1/4	19.94	AF	12.0-4000	64 1/2	3-3/32	9	10	L	3	RR	12	12-21	8.97	4615	PA	Own	Tll	5/8	C	Ch-J6J	Pl	Pl	Ce	Yes†	1
Buccaneer 3S10B	Re-2 Port	1	ACS	2 1/16 x 1 1/2	5.32	S	3.0-4000	28	2-3/32	6 1/2	V	L	2	Cord	4	13-22	13.56	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Rot	Yes	1/2
3D10B	Re-2 Port	1	ACS	2 1/16 x 1 1/2	5.32	S	3.0-4000	29	2-3/32	6 1/2	V	L	2	RR	4	13-22	13.56	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Rot	Yes	1/2
5S10B	Re-2 Port	2	ACS	1 1/16 x 1 1/2	8.84	AF	5.0-4000	45	3-3/32	7 1/2	7 1/4	L	2	RR	6 1/2	13-20	10.38	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Rot	Yes	1/2
5D10B	Re-2 Port	2	ACS	1 1/16 x 1 1/2	8.84	AF	5.0-4000	46 1/2	3-3/32	8	7 1/4	L	2	RR	6 1/2	14-25	12.00	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Ce	Yes	1/2
12S10B	Re-2 Port	2	ACS	2 5/8 x 2 1/4	19.94	AF	12.0-4000	66	3-3/32	9 1/2	V	L	2	RR	12	13-19	8.00	4615	Pl	Own	Tll	5/8	C	Ch-J6J	Pl	Pl	Rot	No	1
12D10B	Re-2 Port	2	ACS	2 5/8 x 2 1/4	19.94	AF	12.0-4000	64 1/2	3-3/32	9	10	L	3	RR	12	12-21	8.97	4615	PA	Own	Tll	5/8	C	Ch-J6J	Pl	Pl	Ce	Yes†	1
Champion 1L	RV	1	ACS	2 1/16 x 1 3/4	5.84	S	4.2-4300	37	2-1/16	8	5 1/2	R	2	Cord	10	14-24	12.00	NE8640	Pl	BS	Tll	...	C	Ch-7	Pl	A	Ce	Yes	3/4
2K	RV	1	ACS	2 1/16 x 1 3/4	5.84	S	4.2-4300	39	2-1/16	8	5 1/2	R	2	RR	10	14-24	12.00	NE8640	Pl	BS	Tll	...	C	Ch-7	Pl	A	Ce	Yes	3/4
2L-HD	RV	1	ACS	2 1/16 x 1 3/4	5.84	S	4.2-4300	40	2-1/16	6 1/2	7 1/2	L	3	RR	10	14-24	12.00	NE8640	PA	BS	Tll	...	C	Ch-7	Pl	A	VP	Yes	3/4
4K	RV-Re	2	ACS	2 1/16 x 1 3/4	12.41	AF	8.5-4200	49 1/2	2-1/16	8 1/4	8 1/2	R	3	RR	12	14-24	12.00	NE8640	Pl	BS	Tll	...	C	Ch-7	Pl	A	Ce	Yes	3/4
4L-S.IX	RV-Re	2	ACS	2 1/16 x 1 3/4	12.41	AF	8.5-4200	51	2-1/16	7	9	L	2	RR	12	14-24	12.00	NE8640	PA	Phe	Tll	...	C	Ch-H16A	Pl	A	VP	Yes	2
4L-HD	RV-Re	2	ACS	2 1/16 x 1 3/4	12.41	AF	8.5-4200	52	2-1/16	7 1/2	9 1/2	L	3	RR	12	14-24	12.00	NE8640	PA	Phe	Tll	...	C	Ch-7	Pl	A	VP	Yes	3/4
Chris-Craft Challenger-J	Re-2 Port	2	MI	2x1 1/2	9.42	AF	5.5-4000*	46	2-1/16	8 3/4	8	L	2	RR	10 1/2	14-25	12.00	4615	Pl	BS	Til	9/16	C	Ch-J8J	Pl	Pl	Rol	Yes	1/2
Commander-K	Re-2 Port	2	MI	2 1/16 x 2 3/32	19.94	AF	10.0-4000*	72	2-1/16	8 3/4	9	L	2	RR	16	13-17	12.00	4615	A	BS	Til	11/16	C	Ch-J8J	A	A	Fvr	No	3/4
Corsair 5020	Re-2 Port	1	ACS	2 1/16 x 1 3/4	6.21	S	3.6-4000	39	2-1/16	7 1/2	6	R	2	RR	8	13-21	12.56	8640	PA	Phe	Til	3/4	C	Ch-H10J	Pl	PA	Rot	No	1/2
5021	Re-2 Port	1	ACS	2 1/16 x 1 3/4	6.21	S	4.0-4200	44	2-1/16	7 1/2	6	R	2	RR	8	13-21	10.75	8640	PA	Phe	Til	3/4	C	Ch-H10J	Pl	PA	Fvr	Yes†	1/2
5027	Re-2 Port	2	ACS	1 1/16 x 1 1/4	7.48	AF	5.0-4200	47	2-1/16	7 1/2	7	R	2	RR	8	13-21	10.75	8640	PA	Phe	Til	11/16	C	Ch-H10J	PA	PA	Fvr	Yes†	1/2
5023	Re-2 Port	2	ACS	2x1 3/4	11.00	AF	7.5-4200	54	2-1/16	8	7 1/2	R	2	RR	8	13-21	10.75	8640	PA	Phe	Til	11/16	C	Ch-H10J	Pl	PA	Fvr	Yes†	1/2
5028	Re-2 Port	2	ACS	2 1/8 x 2	14.19	AF	10.0-4200	61	2-1/16	8 1/8	10	R	2	RR	8	13-21	10.75	8640	PA	Wico	Tll	11/16	C	Ch-HT10J	PA	PA	Fvr	Yes†	1/2
Elgin 5830	Re-2 Port	1	ACS	1 1/2 x 1 3/16	2.43	S	1.2-4000	19 1/2	2-3/32	6 1/2	5	L	2	Cord	3 1/2	12-21	14.00	X1315	Pl	Wico	Til	11/16	C	AS-A4120	PA	Pl	Air	No	3/4
5840	Re-2 Port	1	ACS	2x1 1/16	4.90	S	2.5-4000	29 1/2	2-1/16	7 1/2	4 1/2	L	2	Cord	7 1/2	14-21	12.00	8640	Pl	Wico	Til	1/2	C	AS-A4120	PA	Pl	VP	No	1/2
5856	Re-2 Port	2	ACS	2x1 1/16	10.60	AF	5.0-4000	47 3/4	3-1/16	7 1/2	6 3/4	L	2	RR	8	14-21	12.00	NE8640	Pl	Wico	Til	1/2	C	AS-A4120	PA	Pl	VP	Yes†	1/2
5864	Re-2 Port	2	ACS	2x1 1/16	10.60	AF	6.0-4000	35 3/4	2-3/32	7 1/2	7 1/2	L	2	Cord	7 1/2	14-21	12.00	NE8640	Pl	Wico	Til	1/2	C	AS-A4120	PA	Pl	VP	No	3/4
5875	Re-2 Port	2	ACS	2x1 1/16	10.60	AF	7.5-4000	48 1/2	3-1/16	7 1/2	7 1/2	L	2	RR	11	14-21	12.00	NE8640	Pl	Wico	Til	1/2	C	AS-A4120	PA	A	VP	Yes†	1/2
5882	Re-2 Port	2	ACS	2 1/16 x 2 3/16	24.00	AF	16.0-4000*	90	3-1/16	9 1/2	9 1/2	R	3	RR	46^	14-21	9.00	4340	A	FM	Til	11/16	C	AS-A4120	A	PA	VP	Yes†	3/4
5884	Re-2 Port	2	ACS	2 1/16 x 2 3/16	24.00	AF	16.0-4000	95	3-1/16	9 1/2	9 1/2	R	3	RR	46^	14-21	12.00	4340	A	FM	Til	11/16	C	AS-A4120	A	PA	VP	Yes†	3/4
Evinrude Sportsman 4425	.....	1	.....	1 5/8 x 1 1/2	3.10	S	1.5-4000	30	2-3/32	6 7/8	5 1/2	....	2	RR	4 1/2	12-23	.....	.....	....	Own	Tll	...	...	Ch-J8-J	...	...	...	Yes	1/2
Sportwin 4423	.....	2	.....	1 5/8 x 1 1/2	6.22	AF	3.3-4000	39	3-3/32	6 7/8	4 3/4	....	2	RR	8 1/2	13-18	.....	.....	....	Own	Own	...	...	Ch-J6-J	...	...	...	Yes	1/2
Fleetwin 4443	.....	2	.....	2 1/16 x 1 3/4	12.40	AF	7.5-4000	49	3-3/32	8	8	....	2	RR	9	13-20	.....	.....	....	Own	Til	...	...	Ch-J6-J	...	...	...	...	1/2
Fastwin 4441	.....	2	.....	2 5/8 x 2 1/4	19.94	AF	14.0-4000	58†	3-3/32	9	10	....	3	RR	48^	12-21	.....	.....	....	Own	Til	...	...	Ch-J6J	...	...	...	...	1/2
Speeditwin 6039	RV-2 Port	2	.....	2 3/4 x 2 1/2	30.00	O	22.5-4000	115	3-3/32	10 1/2	10 1/2	L	3	Cord	20	15-21	.....	.....	....	Own	Own	...	...	Ch-5M-J	...	...	Ce	No	3/4
Big Twin 2001	.....	2	.....	2 7/8 x 2 3/4	35.70	.....	25.0-4000	85†	3-3/32	10 3/8	12 1/2	....	3	RR	48^	12-21	.....	.....	....	Own	Own	...	...	Ch-J6-J	...	...	...	Yes	1/2
Firestone 10-A-71	Re-2 Port	1	ACS	2 1/16 x 1 3/4	6.21	S	3.6-4000	39	2-1/16	7 1/2	6	R	2	RR	8	13-21	12.56	8640	PA	Phe	Til	3/4	C	Ch-H10J	Pl	PA	Rot	No	1/2
10-A-72	Re-2 Port	1	ACS	2 1/16 x 1 3/4	6.21	S	4.0-4200	44	2-1/16	7 1/2	6	R	2	RR	8	13-21	10.75	8640	PA	Phe	Til	3/4	C	Ch-H10J	Pl	PA	Fvr	Yes†	1/2
10-A-73	Re-2 Port	2	ACS	1 1/16 x 1 1/4	7.48	AF	5.0-4200	47	2-1/16	7 1/2	7	R	2	RR	8	13-21	10.75	8640	PA	Phe	Til	11/16	C	Ch-H10J	PA	PA	Fvr	Yes†	1/2
10-A-74	Re-2 Port	2	ACS	2x1 3/4	11.00	AF	7.5-4200	54	2-1/16	8	7 1/2	R	2	RR	8	13-21	10.75	8640	PA	Phe	Til	11/16	C	Ch-H10J	Pl	PA	Fvr	Yes†	1/2
10-A-75	Re-2 Port	2	ACS	2 1/16 x 2	14.19	AF	10.0-4200	61	2-1/16	8 1/16	10	R	2	RR	8	13-21	10.75	8640	PA	Wico	Til	11/16	C	Ch-HT10J	PA	PA	Fvr	Yes†	1/2
Flambeau 174520	....3 Port	1	CI	1 1/16 x 1 1/16	4.62	S	2.5-4000	26	3-3/32	7	6	L	2	Cord	6	13-24	12.00	1315	Pl	Eis	Own	...	Fl	Ch-J7J	Pl	Pl	Rot	No	3/4
174050	....3 Port	2	CI	1 1/16 x 1 1/16	9.24	AF	5.0-4000	32	3-3/32	8	8 1/2	L	2	Cord	6	13-24	12.00	1315	Pl	Eis	Own	...	Fl	Ch-J7J	Pl	Pl	Rot	No	3/4
Hiawatha 150MI-25-7959A	Re-2 Port	1	ACS	2 1/16 x 1 1/2	5.32	S	3.0-4000	29	2-3/32	6 1/2	V	L	2	RR	4	13-22	13.56	4615	Pl	Own	Own	1/2	Pr	Ch-J6-J	Pl	Pl	Rot	Yes	1/2
150MI-25-7973A	Re-2 Port	2	ACS	1 1/16 x 1 1/2	8.84	AF	5.0-4000	46 1/2	3-3/32	8	7 1/4	L	2	RR	6 1/2	14-25	12.00	4615	Pl	Own	Own	1/2	Pr	Ch-J6-J	Pl	Pl	Ce	Yes	1/2
150MI-25-7981A	Re-2 Port	2	ACS	2 5/8 x 2 1/4	19.94	AF	12.0-4000	64 1/2	3-3/32	9	10	L	3	RR	12	12-21	8.97	4615	PA	Own	Til	5/8	C	Ch-J6-J	Pl	Pl	Ce	Yes†	1
Johnson Sea Horse 2 1/2	RV-3 Port	2	ACS	1 5/8 x 1 5/8	4.08	AF	2.5-4000	31	2-3/32	6 5/8	5 1/4	R	2	RR	4 1/2	13-20	13.33	4615	Pl	Own	Own	1/2	Pr	Ch-J6J	Pl	Pl	Rot	Yes	1/2
Sea Horse 5	RV-3 Port	2	ACS	1 1/16 x 1 1/2	8.64	AF	5.0-4000	44	3-3/32	8	7 1/4	R	2	RR	7	14-25	12.00	4615	Pl	Own	Own	11/16	Pr	Ch-J6J	Pl	Pl	VV	Yes†	1/2

| | | |

1951 LIGHT TRUCK SPECIFICATIONS

MAKE AND MODEL	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: No. of Cylinders Bore and Stroke	ENGINE DETAILS: Displacement	ENGINE DETAILS: Torque lb. ft.	ENGINE DETAILS: Maximum Brake H.P. at R.P.M. Given	No. of Forward Speeds	REAR AXLE: Gear and Type	REAR AXLE: Drive and Torque	REAR AXLE: Gear Ratio Range in High
Chevrolet.....JP	116	....	4800	^2550	6.00/16S	15S	6-3 1/4x3 3/4	216	176	92-3400	3	Hy	T	** -4.11
.....JR	125	....	5800	^2820	15S	7.50/17S	6-3 1/4x3 3/4	216	176	92-3400	3	HyF	H	†† -4.57
†Fwd. Control....JT	125	....	7000	^2675	15S	7.50/17S	6-3 7/16x3 1/2	235	182	92-3400	3	HyF	H	** -5.14
.....JS	137	....	8800	^3155	7.00/17S	7.00/18	6-3 1/4x3 3/4	216	176	92-3400	4	HyF	H	** -5.14
†Fwd. Control....JU	137	....	10000	^2915	7.00/17S	7.00/18	6-3 7/16x3 1/2	235	182	92-3400	4	HyF	H	** -5.14
.....UJ	137	....	14000	3815	6.50/20D	7.50/20	6-3 1/4x3 3/4	216	176	92-3400	4	HyF	H	-6.17
.....UK	161	....	14000	3930	6.50/20D	7.50/20	6-3 1/4x3 3/4	216	176	92-3400	4	HyF	H	-6.17
(School Bus)...UL	161	....	12000	4170	6.50/20D	7.00/20	6-3 1/4x3 3/4	216	176	92-3400	4	HyF	H	-6.17
.....UVS	137	....	15000	4250	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	193	105-3600	4	HyF	H	-6.17
.....UWS	161	....	15000	4330	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	193	105-3600	4	HyF	H	-6.17
.....UYS	179	....	15000	4460	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	193	105-3600	4	HyF	H	-6.17
(c.o.e.).....UPS	110	....	15000	^4735	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	190	100-3500	4	HyF	H	-6.17
(c.o.e.).....URS	134	....	15000	^4830	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	190	100-3500	4	HyF	H	-6.17
(c.o.e.).....USS	158	....	15000	^4925	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	190	100-3500	4	HyF	H	-6.17
(c.o.e.).....UP	110	....	16000	^4735	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	190	100-3500	4	HyF	H	-6.17
(c.o.e.).....UR	134	....	16000	^4830	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	190	100-3500	4	HyF	H	-6.17
(c.o.e.).....US	158	....	16000	^4925	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	190	100-3500	4	HyF	H	-6.17
.....UV	137	....	16000	4250	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	193	105-3600	4	HyF	H	-6.17
.....UW	161	....	16000	4330	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	193	105-3600	4	HyF	H	-6.17
.....UY	179	....	16000	4460	7.50/20D	9.00/20‡♦	6-3 7/16x3 1/2	235	193	105-3600	4	HyF	H	-6.17
(School Bus)...UX	199	....	15000	4705	7.50/20D	8.25/20	6-3 7/16x3 1/2	235	193	105-3600	4	HyF	H	-6.17
Dodge.....B-3-B	108	108	4850	.....	6.00/16S	6.50/16S	6-3 1/4x4 1/8	218	175	97-3600	3	H 1/2	H	3.73-4.78
.....B-3-C	116	116	5800	.....	7.00/15S	7.00/15S	6-3 1/4x4 1/8	218	175	97-3600	3	H 1/2	H	4.1 -4.78
.....B-3-D	116	128	8000	.....	6.00/16S^	6.50/16	6-3 1/4x4 1/8	230	190	103-3600	3	HyF	H	3.9 -4.89
Rt. Van Sp....B3DU	102	117	9600	.....	6.50/16^	8.25/16S	6-3 1/4x4 1/8	230	190	99-3600	3	HyF	H	3.9 -4.89
Rt. Van Sp....B3EU	102	142	10100	.....	7.50/16•	9.00/16S	6-3 1/4x4 1/8	230	190	99-3600	4	HyF	H	4.89-5.8
.....B-3-FL	128	152	9000	.....	6.00/20‡	8.25/20	6-3 7/16x4 1/4	236	192	109-3600	4	HyF	H	5.62-6.8
.....B-3-F	128	170	13500	.....	6.50/20	7.50/20	6-3 7/16x4 1/4	236	192	109-3600	4	HyF	H	5.62-6.8
.....B-3-FA	128	170	13500	.....	6.50/20	7.50/20	6-3 7/16x4 1/4	236	192	109-3600	4	SFd	H	5.83-8.11
.....B-3-G	128	192	14500	.....	6.50/20¶	8.25/20	6-3 7/16x4 1/4	236	192	109-3600	4	HyF	H	5.62-6.8
.....B-3-GA	128	192	14500	.....	6.50/20¶	8.25/20	6-3 7/16x4 1/4	236	192	109-3600	4	SFd	H	5.83-8.81
.....B-3-GM	107	161	14750	.....	6.50/20	8.25/20	6-3 7/16x4 1/4	236	186	105-3600	4	HyF	H	5.62-6.8
.....B-3-GMA	107	161	14750	.....	6.50/20	8.25/20	6-3 7/16x4 1/4	236	186	105-3600	4	SFd	H	5.83-8.81
.....B-3-H	128	192	16000	.....	7.50/20	8.25/20	6-3 7/16x4 1/4	236	193	109-3600	4	HyF	H	6.28-6.8
.....B-3-HA	128	192	16000	.....	7.50/20	8.25/20	6-3 7/16x4 1/4	236	193	109-3600	4	SFd	H	5.83-8.81
.....B-3-HM	107	161	16250	.....	7.50/20	8.25/20	6-3 7/16x4 1/4	236	186	105-3600	4	HyF	H	6.28-6.8
.....B-3-HMA	107	161	16250	.....	7.50/20	8.25/20	6-3 7/16x4 1/4	236	186	105-3600	4	SFd	H	5.83-8.81
.....B-3-HH	128	192	16000	.....	7.50/20	8.25/20	6-3 7/16x4 1/4	236	193	109-3600	4	HyF	H	6.28-6.8
.....B-3-HHA	128	192	16000	.....	7.50/20	8.25/20	6-3 7/16x4 1/4	236	193	109-3600	4	SFd	H	5.83-8.81
.....B-3-HHM	107	161	16250	.....	7.50/20	8.25/20	6-3 7/16x4 1/4	236	186	105-3600	4	HyF	H	6.28-6.8
.....B-3-HHMA	107	161	16250	.....	7.50/20	8.25/20	6-3 7/16x4 1/4	236	186	105-3600	4	SFd	H	5.83-8.81
.....B-3-JL	128	212	17000	.....	6.50/20	9.00/20	6-3 7/16x4 1/2	250	206	114-3600	5	HyF	H	6.28-7.16
.....B-3-JAL	128	212	17000	.....	6.50/20	9.00/20	6-3 7/16x4 1/2	250	206	114-3600	5	SFd	H	5.83-8.81
.....B-3-J	128	212	17000	.....	6.50/20	9.00/20	6-3 7/16x4 1/2	250	206	114-3600	5	HyF	H	6.28-7.16
.....B-3-JA	128	212	17000	.....	6.50/20	9.00/20	6-3 7/16x4 1/2	250	206	114-3600	5	SFd	H	5.83-8.81
.....B-3-JML	107	161	17250	.....	6.50/20	9.00/20	6-3 7/16x4 1/2	250	200	109-3600	5	HyF	H	6.28-7.16
.....B-3-JMAL	107	161	17250	.....	6.50/20	9.00/20	6-3 7/16x4 1/2	250	200	109-3600	5	SFd	H	5.83-8.81
.....B-3-JM	107	161	17250	.....	6.50/20	9.00/20	6-3 7/16x4 1/2	250	200	109-3600	5	HyF	H	6.28-7.16
.....B-3-JMA	107	161	17250	.....	6.50/20	9.00/20	6-3 7/16x4 1/2	250	200	109-3600	5	SFd	H	5.83-8.81
.....B-3-KL	128	212	18000	.....	8.25/20♦	9.00/20	6-3 7/16x4 1/2	250	206	114-3600	5	HyF	H	6.8 -7.2
.....B-3-KAL	128	212	18000	.....	8.25/20	9.00/20	6-3 7/16x4 1/2	250	206	114-3600	5	SFd	H	6.14-9.04
.....B-3-K	128	212	18000	.....	8.25/20	9.00/20	6-3 7/16x4 1/2	250	206	114-3600	5	HyF	H	6.8 -7.2
.....B-3-KA	128	212	18000	.....	8.25/20	9.00/20	6-3 7/16x4 1/2	250	206	114-3600	5	SFd	H	6.14-9.04
.....B-3-KML	107	161	18250	.....	8.25/20	9.00/20	6-3 7/16x4 1/2	250	200	109-3600	5	HyF	H	6.8 -7.2
.....B-3-KMAL	107	161	18250	.....	8.25/20	9.00/20	6-3 7/16x4 1/2	250	200	109-3600	5	SFd	H	6.14-9.04
Ford														
F-1 Cowl....1HC-84	114	114	4700	2226	6.00/16.4	6.50/16-6S	6-3.3x4.4	226	180	95-3300	3	H 1/2	H	3.92-4.27
Cowl.....1RC-84	114	114	4700	2286	6.00/16-4	6.50/16-6S	8-3 7/16x3 3/4	239	180	100-3800	3	H 1/2	H	3.92-4.27
F-2														
Cowl.....1HD-84	122	122	5700	2616	6.50/16-6	7.50/16-6S	6-3.3x4.4	226	180	95-3300	4	SF	H	** -4.86
Cowl.....1RD-84	122	122	5700	2656	6.50/16-6	7.50/16-6S	8-3 7/16x3 3/4	239	180	100-3800	4	SF	H	** -4.86

MAKE AND MODEL	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: No. of Cylinders Bore and Stroke	ENGINE DETAILS: Displacement	ENGINE DETAILS: Torque lb. ft.	ENGINE DETAILS: Maximum Brake H.P. at R.P.M. Given	No. of Forward Speeds	REAR AXLE: Gear and Type	REAR AXLE: Drive and Torque	REAR AXLE: Gear Ratio Range in High
Ford—Continued														
F-3														
Cowl.....1HY-84	122	122	6800	2849	7.00/17-6S	7.50/17-8S	6-3.3x4.4	226	180	95-3300	4	SF	H	** -4.86
Cowl.....1RY-84	122	122	6800	2889	7.00/17-6S	7.50/17-8S	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	** -4.86
F-3 Parcel Divy.														
w/s.....1HJ	104	104	7800	3030	7.00/16-6S	7.50/17-8S	6-3.3x4.4	226	180	95-3300	3	SF	H	** -4.86
w/s.....1H2J	122	122	7800	3100	7.00/16-6S	7.50/17-8S	6-3.3x4.4	226	180	95-3300	3	SF	H	** -4.86
F-4														
Cowl....1HTL-84	134	134	10000	3457	7.00/20-8S	7.00/18-8	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-5.83
Cowl....1RTL-84	134	134	10000	3497	7.00/20-8S	7.00/18-8	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-5.83
F-5														
Cowl.....1HT-84	134	134	14000	3646	6.50/20-6	7.50/20-8	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-6.67
Cowl.....1RT-84	134	134	14000	3686	6.50/20-6	7.50/20-8	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-6.67
Cowl.....1H8T-84	158	158	14000	3796	6.50/20-6	7.50/20-8	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-6.67
Cowl.....1R8T-84	158	158	14000	3836	6.50/20-6	7.50/20-8	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-6.67
Cowl.....1H6T-84	176	176	14000	3926	6.50/20-6	7.50/20-8	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-6.67
Cowl.....1R8T-84	176	176	14000	3966	6.50/20-6	7.50/20-8	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-6.67
F-5 C.O.E.														
Cab....1HOW-81	110	110	14000	4346	6.50/20-6	7.50/20-8	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-6.67
Cab....1ROW-81	110	110	14000	4386	6.50/20-6	7.50/20-8	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-6.67
Cab.....1HW-81	134	134	14000	4476	6.50/20-6	7.50/20-8	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-6.67
Cab.....1RW-81	134	134	14000	4516	6.50/20-6	7.50/20-8	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-6.67
Cab....1H8W-81	158	158	14000	4546	6.50/20-6	7.50/20-8	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-6.67
Cab....1R8W-81	158	158	14000	4586	6.50/20-6	7.50/20-8	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-6.67
F-5 School Bus														
Bus Cl....1H8T-84	158	158	12000	3755	6.50/20-6	7.00/20-8	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-6.67
Bus Cl....1R8T-84	158	158	12000	3795	6.50/20-6	7.00/20-8	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-6.67
F-6 School Bus														
Bus Cl....1H4T-84	194	194	15000	4260	7.50/20-8	8.25/20-10	6-3.3x4.4	226	180	95-3300	4	SF	H	5.14-6.67
Bus Cl....1R4T-84	194	194	15000	4300	7.50/20-8	8.25/20-10	8-3 7/16x3 1/4	239	180	100-3800	4	SF	H	5.14-6.67
F-6														
Cowl....1HTH-84	134	134	16000	3980	7.50/20-8	8.25/20-10	6-3.3x4.4	226	180	95-3300	4	Hy	H	6.2 -7.2
Cowl....1RTH-84	134	134	16000	4020	7.50/20-8	8.25/20-10	8-3 7/16x3 1/4	239	180	100-3800	4	Hy	H	6.2 -7.2
Cowl....1MTH-84	134	134	16000	4165	7.50/20-8	8.25/20-10	6-3.5x4.4	254	212	110-3400	4	Hy	H	6.2 -7.2
Cowl....1H8TH-84	158	158	16000	4050	7.50/20-8	8.25/20-10	6-3.3x4.4	226	180	95-3300	4	Hy	H	6.2 -7.2
Cowl....1R8TH-84	158	158	16000	4090	7.50/20-8	8.25/20-10	8-3 7/16x3 1/4	239	180	100-3800	4	Hy	H	6.2 -7.2
Cowl....1M8TH-84	158	158	16000	4235	7.50/20-8	8.25/20-10	6-3.5x4.4	254	212	110-3400	4	Hy	H	6.2 -7.2
Cowl....1H6TH-84	176	176	16000	4130	7.50/20-8	8.25/20-10	6-3.3x4.4	226	180	95-3300	4	Hy	H	6.2 -7.2
Cowl....1R6TH-84	176	176	16000	4170	7.50/20-8	8.25/20-10	8-3 7/16x3 1/4	239	180	100-3800	4	Hy	H	6.2 -7.2
Cowl....1M6TH-84	176	176	16000	4315	7.50/20-8	8.25/20-10	6-3.5x4.4	254	212	110-3400	4	Hy	H	6.2 -7.2
F-6 C.O.E.														
Cab...1HOWH-81	110	110	16000	4549	7.50/20-8	8.25/20-10	6-3.3x4.4	226	180	95-3300	4	Hy	H	6.2 -7.2
Cab...1ROWH-81	110	110	16000	4589	7.50/20-8	8.25/20-10	8-3 7/16x3 1/4	239	180	100-3800	4	Hy	H	6.2 -7.2
Cab..1MOWH-81	110	110	16000	4574	7.50/20-8	8.25/20-10	6-3.5x4.4	254	210	106-3400	4	Hy	H	6.2 -7.2
Cab....1HWH-81	134	134	16000	4679	7.50/20-8	8.25/20-10	6-3.3x4.4	226	180	95-3300	4	Hy	H	6.2 -7.2
Cab....1RWH-81	134	134	16000	4719	7.50/20-8	8.25/20-10	8-3 7/16x3 1/4	239	180	100-3800	4	Hy	H	6.2 -7.2
Cab....1MWH-81	134	134	16000	4704	7.50/20-8	8.25/20-10	6-3.5x4.4	254	210	106-3400	4	Hy	H	6.2 -7.2
Cab...1H8WH-81	158	158	16000	4749	7.50/20-8	8.25/20-10	6-3.3x4.4	226	180	95-3300	4	Hy	H	6.2 -7.2
Cab...1R8WH-81	158	158	16000	4789	7.50/20-8	8.25/20-10	8-3 7/16x3 1/4	239	180	100-3800	4	Hy	H	6.2 -7.2
Cab...1M8WH-81	158	158	16000	4774	7.50/20-8	8.25/20-10	6-3.5x4.4	254	210	106-3400	4	Hy	H	6.2 -7.2
F-7														
Cowl.....1EQ-84	135	135	19000	5478	8.25/20-10	9.00/20-10	8-3 1/2x4 1/8	337	255	145-3600	5	Hy	H	** -6.8
Cowl.....1E7Q-84	147	147	19000	5528	8.25/20-10	9.00/20-10	8-3 1/2x4 1/8	337	255	145-3600	5	Hy	H	** -6.8
Cowl.....1E9Q-84	159	159	19000	5648	8.25/20-10	9.00/20-10	8-3 1/2x4 1/8	337	255	145-3600	5	Hy	H	** -6.8
Cowl.....1E8Q-84	178	178	19000	5748	8.25/20-10	9.00/20-10	8-3 1/2x4 1/8	337	255	145-3600	5	Hy	H	** -6.8
Cowl.....1E5Q-84	195	195	19000	5808	8.25/20-10	9.00/20-10	8-3 1/2x4 1/8	337	255	145-3600	5	Hy	H	** -6.8
F-8														
Cowl....1EQH-84	135	135	22000	5934	9.00/20-10	10.0/20-12	8-3 1/2x4 1/8	337	255	145-3600	5	SF	H	** -7.17
Cowl...1E7QH-84	147	147	22000	5984	9.00/20-10	10.0/20-12	8-3 1/2x4 1/8	337	255	145-3600	5	SF	H	** -7.17
Cowl...1E9QH-84	159	159	22000	6224	9.00/20-10	10.0/20-12	8-3 1/2x4 1/8	337	255	145-3600	5	SF	H	** -7.17
Cowl...1E8QH-84	178	178	22000	6124	9.00/20-10	10.0/20-12	8-3 1/2x4 1/8	337	255	145-3600	5	SF	H	** -7.17
Cowl...1E5QH-84	195	195	22000	6284	9.00/20-10	10.0/20-12	8-3 1/2x4 1/8	337	255	145-3600	5	SF	H	** -7.17

1951 Light Truck Specifications—*continued*

MAKE AND MODEL	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: No. of Cylinders Bore and Stroke	ENGINE DETAILS: Displacement	ENGINE DETAILS: Torque lb. ft.	ENGINE DETAILS: Maximum Brake H.P. at R.P.M. Given	No. of Forward Speeds	REAR AXLE: Gear and Type	REAR AXLE: Drive and Torque	REAR AXLE: Gear Ratio Range in High
Reo F-20A	125	125	16000	4785	7.50/20	8.25/20	6–3⅝x4½	255	189	107–3400	4	HF	H	5.28x6.8
F-20T	125	125	16000	5215	8.25/20	8.25/20	6–3⅝x4½	255	189	107–3400	4	Hfd	H	6.13–8.10
F-20B	150	150	16000	4925	7.50/20	8.25/20	6–3⅝x4½	255	189	107–3400	4	HF	H	5.28–6.8
F-20C	170	170	16000	5060	7.50/20	8.25/20	6–3⅝x4½	255	189	107–3400	4	HF	H	5.28–6.8
F-20L	185	185	16000	5185	7.50/20	8.25/20	6–3⅝x4½	255	189	107–3400	4	HF	H	5.28–6.8
F-21A	130	130	18000	5110	8.25/20	9.00/20	6–3⅝x4½	255	189	107–3400	4	HF	H	5.28–6.8
F-21T	130	130	18000	5535	8.25/20	9.00/20	6–3⅝x4½	255	189	107–3400	4	HFd	H	6.13–8.10
F-21B	150	150	18000	5325	8.25/20	9.00/20	6–3⅝x4½	255	189	107–3400	4	HF	H	5.28–6.8
F-21C	170	170	18000	5460	8.25/20	9.00/20	6–3⅝x4½	255	189	107–3400	4	HF	H	5.28–6.8
F-21L	185	185	18000	5555	8.25/20	9.00/20	6–3⅝x4½	255	189	107–3400	4	HF	H	5.28–6.8
F-22A	130	130	20000	5840	9.00/20	10.00/20	6–3⅞x4½	292	224	124–3300	5	HF	H	6.16–6.8
F-22T	130	130	20000	6415	9.00/20	10.00/20	6–3⅞x4½	292	224	124–3300	5	Hfd	H	6.67–8.85
F-22B	150	150	20000	6005	9.00/20	10.00/20	6–3⅞x4½	292	224	124–3300	5	HF	H	6.16–6.8
F-22C	170	170	20000	6140	9.00/20	10.00/20	6–3⅞x4½	292	224	124–3300	5	HF	H	6.16–6.8
F-22L	185	185	20000	6275	9.00/20	10.00/20	6–3⅞x4½	292	224	124–3300	5	HF	H	6.16–6.8
Studebaker 2R5	112	112	4600	2125	6.00/16S	6.50/16S	6–3x4	170	138	85–4000	3	Hy	H	4.89–4.09
2R6	112	112	4600	2365	6.00/16S	6.50/16S	6–3 1/16x4¼	245	205	102–3200	3	Hy	H	4.09–4.89
2R10	122	122	6100	2400	6.50/16S	7.50/16S	6–3x4	170	138	85–4000	3	SF	H	5.57–4.86
2R11	122	122	6100	2640	6.50/16S	7.50/16S	6–3 1/16x4¼	245	205	102–3200	3	SF	H	** –4.86
2R14-21	121	121	7800	3245	7.00/17S	7.00/20	6–3 1/16x4¼	245	205	102–3200	4	SF	H	5.83–6.66
2R15-21	121	121	7800	3005	7.00/17S	7.00/20	6–3x4	170	138	85–4000	4	SF	H	5.83–6.66
2R15-31	131	131	10000	3065	7.00/17S	7.00/20	6–3x4	170	138	85–4000	4	SF	H	5.83–6.66
2R16A	131	195	14000	3695	6.50/20D	8.25/20	6–3 1/16x4¼	245	205	102–3200	4	SF	H	6.66–5.83
2R16B	131	195	15000	3695	6.50/20D	8.25/20	6–3 1/16x4¼	245	205	102–3200	4	SF	H	6.66–5.83
2R17A	131	195	16000	4180	7.50/20D	9.00/20	6–3 1/16x4¼	245	205	102–3200	4	Hy	H	6.80–6.20
2R17B	131	195	17000	4180	7.50/20D	9.00/20	6–3 1/16x4¼	245	205	102–3200	4	Hy	H	6.80–6.20
Willys Jp. CJ-3A	80	80	3500	*2108	6.00/16S	7.00/15S	4–3 1/16x4⅜	134	105	60–4000	‡6	Hy ½	H	** –5.38
473-4WD	118	118	5300	*3115	7.00/16S	.....	4–3 1/16x4⅜	134	114	72–4000	‡6	S ½	H	** –5.38

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

KEY TO REFERENCES

c.f.—Cab Forward design.

c.o.e.—Cab-Over-Engine design.

(D)—Diesel-engine equipped.

(T)—Designed for tractor use only.

(C)—Converted Ford or Chevrolet Model.

Key to Abbreviation Symbols

FOR ALL MAKES

^—Includes weight of cab.

•—Gross combination weight.

REAR AXLE

Final Drive and Type

B—Bevel.

F—Full-floating.

H or Hy—Hypoid.

d—Dual range axle.

2—Double Reduction.

S—Spiral bevel.

¾—Three Quarters Floating.

½—Semi-Floating.

T—Torque Tube.

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).

R—Radius Rods.

L—Parallel Torque Rods.

T—Torque Arm.

DODGE

^—Front only; rear 7.00/16S.

*—Front only; rear 8.25/16.

‡—Front only; rear 6.50/20S

¶—Front only; rear 7.50/20.

ǂ—Front only; rear 9.00/20.

CHEVROLET

ǂ—8.25/20 front tires are required when 9.00/20 dual rears are used.

‡—7.50/20 can be used on front with no decrease in G.V.W. when 8.25/20 are used on dual rear wheels.

§—4-speed transmission available.

††—Also available in 5.14 ratio.

¤—5.43 axle available on Models UJ-UK-UL and 2-speed axle available on UVS-UWS-UYS-UP-UPS-UR-URS-US-USS-UV-UW-UY-UX.

†—Forward control chassis for Door-to-Door delivery bodies. These chassis do not have cowl.

WILLYS

*—Complete vehicle with pickup type body.

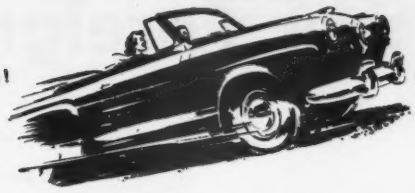
‡—3-speed transmission, 2-speed transfer case.

1951 British Passenger Cars

MAKE AND MODEL	ENGINE									GENERAL DATA											REAR AXLE				
										TREAD		OVERALL DIMENSIONS (In.)													
	Number of Cylinders, Bore and Stroke (In.)	Maximum Brake Hp. at Specified R.P.M.	Piston Displacement (Cu. In.)	Compression Ratio (To -1)	Cylinder Arrangement	Valve Location	Piston Material	Camshaft Drive	(Wheelbase (In.)	Front (In.)	Rear (In.)	Length Including Bumpers and Bumper Guards	Width	Height—Road to Roof, No Load	Tires (In.)	Oil Pressure to—	Carburetors—No. Used and Type	Cooling System	Shifting Method	No. of Forward Speeds	Final Drive Type	Gear Ratio (To -1)	Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
Allard K	8-3.06x3.75	95-3800	223.9	7.00	V	L	AA	HG	106.0	56.0	52.0	146.0	68.0	47.0	6.25/16	abc	2-DD	TP	HS	3	SB	3.78	TT	Fr	H	2468
J	8-3.19x3.75	140-4000	238.5	7.00	V	I	AA	HG	100.0	56.0	52.0	148.0	63.0	34.0	6.00/16	abc	2-DD	TP	HS	3	SB	3.50	TT	Fr	H	2016
P	8-3.06x3.75	85-3500	223.9	6.15	V	L	AA	HG	112.0	56.0	58.0	189.0	71.0	60.0	6.25/16	abc	1-DD	TP	HS	3	SB	3.78	TT	Fr	H	3248
Alta ^^GP1	4-3.07x3.07	275-6300	90.6	8.50	IL	I	AA	C	94.0	51.0	50.0	....	....	....	(aa)	abcde	2-Ho	P	HS	4	StB	3.80	TA	FR	H	1600
GP2	4-3.29x3.54	170-6100	121.4	14.70	IL	I	AA	C	94.0	51.0	50.0	....	....	....	(bb)	abcde	2-Ho	P	HS	4	StB	3.80	TA	FR	H	1600
Alvis TA-21	6-3.31x3.54	83-4000	182.4	7.25	IL	I	AA	C	111.5	54.6	54.1	182.1	66.0	62.5	6.00/15	abce	1-DD	P	HS	4	Hy	4.09	Sp	Fr	H	3192
TB-21	6-3.31x3.54	95-4000	182.4	7.25	IL	I	AA	C	111.5	54.6	54.1	177.2	67.0	58.0	6.00/15	abce	1-SH	P	HS	4	Hy	3.77	Sp	Fr	H	2828
Armstrong-Siddeley 18HP	6-2.76x3.94	75-4200	140.9	6.50	IL	I	AA	C	115.0	54.0	54.5	186.0	68.0	61.0	6.50/17	abce	1-DU	P	HP	4	Hy	5.10	....	Fr	HM	3115
Aston-Martin DB2	6-3.07x3.54	105-5000	157.2	6.50	IL	I	AA	C	99.0	54.0	54.0	162.5	65.0	53.5	6.00/16	abc	2-Ho	P	HS	4	Hy	4.10	Sp	Fr	H	2454
Austin A40	4-2.58x3.50	40-4300	73.2	7.20	IL	I	AA	C	92.5	48.5	49.5	153.2	61.0	63.8	5.25/16	abce	1-Do	P	HS	4	SB	5.14	Sp	Fr	MH	2128
A70	4-3.12x4.38	68-3800	134.1	6.80	IL	I	AA	C	99.0	54.0	56.0	167.5	69.6	65.4	6.00/16	abce	1-Do	P	HS	4	SB	4.12	Sp	Fr	H	2744
A90	4-3.44x4.38	88-4000	162.2	7.50	IL	I	AA	C	96.0	53.5	55.5	177.1	70.0	61.0	5.50/16	abce	2-Do	P	HS	4	SB	4.12	Sp	Fr	H	3000
A125, A135	6-3.44x4.38	.....	243.0	6.80	IL	I	AA	C	119.0	58.0	60.0	192.0	73.0	67.0	6.50/16	abce	1-Do	P	HS	4	Hy	4.09	Sp	Fr	H	4382
Bentley Mark VI	6-3.50x4.50	.....	280.0	6.40	IL	F	AA	HG	120.0	56.5	58.5	192.0	70.0	66.0	6.50/16	abcd	2-SH	P	HS	4	Hy	3.73	Sp	Fr	HM	4150
Bristol 400	6-2.60x3.78	85-4500	120.2	7.50	IL	I	AA	C	114.0	51.7	54.0	191.5	67.0	....	5.50/16	abcde	3-Do	P	HS	4	SB	3.90	RA	FR	H	2580
Citroen **Light 15	4-3.07x3.94	58-4300	116.6	6.50	IL	I	AA	C	114.5	54.0	53.5	168.0	65.2	59.2	6.50/16	abce	1-SD	TS	HS	3	SB	3.46	Sp	Fr	H	2352
**Six	6-3.07x3.94	76-3700	175.0	6.40	IL	I	AA	C	121.5	58.5	58.0	191.0	69.2	60.2	7.25/16	abce	1-DD	TS	HS	3	SB	3.88	Sp	Fr	H	3052
Daimler Consort	6-2.74x4.35	70-4200	154.0	7.00	IL	I	AA	C	114.0	52.0	52.0	180.0	65.5	63.0	6.00/16	abce	1-Ho	P	Pr	4	Hy	4.30	Sp	Fr	MH	3440
Sports	6-2.74x4.35	85-4200	154.0	7.00	IL	I	AA	C	114.0	52.0	52.0	187.5	64.5	62.0	6.00/16	abce	2-Ho	P	Pr	4	Wo	4.86	Sp	Fr	MH	3520
27	6-3.35x4.72	100-3600	250.0	6.30	IL	I	AA	C	138.4	60.0	63.0	213.5	73.5	72.0	8.00/17	abce	1-Do	P	Pr	4	Hy	4.72	TA	....	MH	5570
36	8-3.35x4.72	150-3600	333.0	6.30	IL	I	AA	C	147.0	60.0	63.0	222.0	73.5	72.0	8.00/17	abce	2-Do	P	Pr	4	Hy	4.09	TA	....	MH	5910
Ford Zephyr Six	6-3.12x3.00	68-4000	138.0	6.80	IL	I	AS	C	104.0	50.0	49.0	171.8	63.9	60.8	6.40/13	abce	1-SD	P	HS	3	Hy	4.38	Sp	Fr	M	2496
Consul	4-3.12x3.00	47-4400	92.0	6.80	IL	I	AS	C	100.0	50.0	49.0	162.6	64.0	60.8	5.90/13	abce	1-SD	P	HS	3	Hy	4.62	Sp	Fr	M	2347
Prefect	4-2.50x3.64	30-4000	71.6	6.16	IL	L	AA	C	94.0	45.0	45.0	155.2	56.3	63.5	5.00/16	abce	1-SD	TS	HS	3	SB	5.50	TT	N	M	1808
Domestic Ang.	4-2.23x3.64	23-4000	58.9	6.30	IL	L	AA	C	90.0	45.0	45.0	152.2	56.5	64.2	4.50/17	abce	1-SD	TS	HS	3	SB	5.50	TT	N	M	1636
Export Ang.	4-2.50x3.64	30-4000	71.6	6.16	IL	L	AA	C	90.0	45.0	45.0	152.2	56.5	64.2	5.00/16	abce	1-SD	TS	HS	3	SB	5.50	TT	N	M	1657
Frazer-NashLeMansReplica	6-2.60x3.78	120-5500	120.2	9.00	IL	I	AA	C	96.0	48.0	48.0	141.0	58.0	....	5.25/16	abcde	3-Do	P	HS	4	SB	3.50	RA	FR	H	1484
Cabriolet	6-2.60x3.78	85-4500	120.2	7.50	IL	I	AA	C	108.0	48.0	54.0	164.0	64.0	....	5.50/16	abcde	3-Do	P	HS	4	SB	3.90	RA	FR	H	2180
Milk Migtia	6-2.60x3.78	120-5500	120.2	9.00	IL	I	AA	C	96.0	48.0	48.0	150.0	58.0	....	5.25/16	abcde	3-Do	P	HS	4	SB	3.50	RA	FR	H	1710
Hillman Minx	4-2.56x3.74	42-4200	77.1	6.60	IL	L	AA	C	93.0	48.6	48.5	159.9	62.0	60.0	5.50/15	abcde	1-Do	P	HS	4	SB	5.22	Sp	Fr	H	1998
HRG 1100	4-2.36x3.74	40-5200	65.5	7.75	IL	I	AA	C	100.5	48.0	45.0	143.0	59.0	....	5.50/17	abce	2-Do	P	HS	4	SB	4.55	Sp	N	M	1260
1500	4-2.68x4.06	61-4800	91.3	7.00	IL	I	AA	C	103.5	48.0	45.0	146.0	59.0	....	5.50/17	abce	2-Do	P	HS	4	SB	4.00	Sp	N	M	1372
Humber Hawk	4-3.19x4.33	58-3400	138.2	6.32	IL	L	AA	C	105.5	56.0	57.0	179.5	70.0	64.8	6.40/15	abce	1-Do	P	HS	4	Hy	4.55	....	Fr	H	2777
Super Snipe	6-3.35x4.72	100-3400	249.2	6.25	IL	L	AA	C	117.5	57.9	61.0	190.8	74.8	65.8	6.50/16	abcde	1-Do	P	HS	4	SB	4.09	Sp	Fr	H	3829
Pullman	6-3.35x4.72	100-3400	249.2	6.25	IL	L	AA	C	131.0	57.9	62.2	211.9	74.8	69.0	7.00/16	abcde	1-Do	P	HS	4	SB	4.09	Sp	Fr	H	4448
Jaguar XK 120	6-3.27x4.17	160-5200	210.0	8.00	IL	I	AA	C	100.0	51.0	50.0	173.5	62.0	52.5	6.70/16	abcde	2-SH	P	HS	4	Hy	3.64	Sp	Fr	H	2780
Mark VII	6-3.27x4.17	160-5200	210.0	7.00	IL	I	AA	C	120.0	56.0	57.5	196.5	73.0	63.0	7.00/16	abcde	2-SH	P	HS	4	Hy	4.27	Sp	Fr	H	3700
Jensen Saloon	6-3.43x4.37	130-4000	243.0	6.80	IL	I	AA	C	127.5	58.0	59.0	197.0	70.0	....	6.50/16	ac	3-Do	P	HS	4	Hy	3.70	TA	Fr	HM	3584
Interceptor	6-3.43x4.37	130-4000	243.0	6.80	IL	I	AA	C	114.0	54.0	57.0	183.0	66.0	....	5.50/16	ac	1-Do	P	HS	4	Hy	3.22	TA	Fr	HM	2800
Jowett Javelin	4-2.86x3.54	52-4500	91.1	7.20	HO	I	AA	C	102.0	52.0	49.8	168.0	61.0	62.5	5.25/16	abce	2-SD	P	HS	4	Hy	4.88	TA	FR	H	2240
Jupiter	4-2.86x3.54	60-4500	91.1	8.00	HO	I	AA	C	93.0	52.0	50.5	168.0	62.0	56.0	5.50/16	abce	2-SD	P	HS	4	Hy	4.56	TA	FR	H	1792
Lagonda Saloon, Coupe	6-3.07x3.54	105-5000	157.2	6.50	IL	I	AA	C	113.5	58.4	56.8	188.0	68.0	64.0	6.00/16	abc	2-Ho	P	HS	4	Hy	4.56	TT	FR	H	3248
Lanchester 10	4-2.50x4.00	40-4200	78.5	7.00	IL	I	AA	C	99.0	48.0	48.0	158.5	58.0	63.0	5.25/16	abcd	1-Do	P	Pr	4	SB	5.00	Sp	....	M	2484
14	4-3.00x4.25	60-4200	120.0	6.70	IL	I	AA	C	104.0	52.0	52.0	175.0	65.0	62.0	6.70/15	abce	1-Do	P	Pr	4	Hy	4.58	Sp	....	MH	3136
Lea-Francis 18 HP	4-3.35x4.33	95-4000	163.0	6.00	IL	I	AA	C	111.0	51.5	52.4	184.0	64.0	60.5	6.00/16	abce	1-ST	P	HS	4	Hy	3.90	Sp	Fr	MH	3024
2½ Litre	4-3.35x4.33	100-4000	163.0	7.00	IL	I	AA	C	99.0	51.5	52.4	168.0	62.0	52.0	6.00/16	abce	2-ST	P	HS	4	Hy	3.60	Sp	Fr	MH	2570
14 HP	4-2.95x3.94	70-4700	108.0	7.25	IL	I	AA	CH	111.0	51.5	52.4	184.0	64.0	60.5	5.50/17	abce	1-ST	P	HS	4	Hy	4.88	Sp	Fr	MH	2828
M. G. TD	4-2.62x3.54	54-5200	76.3	7.25	IL	I	AA	C	94.0	47.4	50.0	145.0	58.6	53.0	5.50/15	abce	2-Do	P	HS	4	Hy	5.12	Sp	Fr	H	2065
1¼ Litre Saloon	4-2.62x3.54	44-4800	76.3	7.20	IL	I	AA	C	99.0	47.4	50.0	161.0	59.0	58.0	5.25/16	abce	1-Do	P	HS	4	SB	5.14	Sp	Fr	H	2184
Morgan Plus 4	4-3.35x3.62	68-4200	127.6	6.70	IL	I	AA	C	96.0	47.0	47.0	144.0	56.0	52.5	5.25/16	abcde	1-Do	P	HS	4	Hy	4.10	Sp	Fr	H	1700
Morris Minor	4-2.24x3.54	30-4400	56.0	6.60	IL	L	AT	C	86.0	50.6	50.3	147.5	60.0	60.0	5.00/14	abce	1-Ho	TS	HS	4	Hy	4.55	Sp	Fr	H	1670
Oxford	4-2.89x3.43	41-4000	90.0	6.90	IL	L	AA	HG	97.0	53.0	53.0	167.0	65.0	63.0	5.50/15	abce	1-Ho	P	HS	4	Hy	4.88	Sp	Fr	H	2218
Six	6-2.89x3.43	70-4600	135.0	7.00	IL	I	AW	VS	110.0	53.0	53.0	177.0	66.0	63.5	6.00/15	abce	1-Ho	P	HS	4	Hy	4.55	Sp	Fr	H	2744
Riley 1½ Litre	4-2.72x3.94	55-4500	91.3	6.70	IL	I	AA	C	112.5	52.2	52.2	179.0	63.5	59.0	5.75/16	abce	1-Ho	P	HS	4	SB	4.89	Sp	Fr	H	2688
2½ Litre	4-3.17x4.72	100-4500	149.0	6.80	IL	I	AA	C	119.0	52.2	52.2	188.0	63.5	59.5	6.00/16	abce	2-Ho	P	HS	4	SB	4.11	Sp	Fr	H	3164
Rolls-Royce Silver Dawn	6-3.50x4.50	.....	260.0	6.40	IL	F	AA	HG	120.0	56.5	58.5	192.0	70.0	66.0	6.50/16	abcd	1-DD	P	HS	4	Hy	3.73	Sp	Fr	HM	4150
Silver Wraith	6-3.50x4.50	.....	260.0	6.40	IL	F	AA	HG	127.0	58.5	60.0	206.0	73.0	72.5	6.50/17	abcd	1-DD	P	HS	4	Hy	3.73	Sp	Fr	HM	4500
Rover 75	6-2.57x4.14	75-4200	128.2	7.25	IL	F	AA	C	111.0	52.0	51.5	178.2	65.6	63.2	6.00/15	abce	2-SD	P	HS	4	SB	4.30	Sp	Fr	M	3139
Singer SM1500	4-2.88x3.54	50-4500	91.9	7.00	IL	I	AA	C	107.5	50.5	51.0	174.0	63.0	64.0	5.50/16	abc	1-SD	P	HS	4	Hy	5.12	Sp	Fr	H	2604
9HP	4-2.36x3.74	36-4500	65.5	6.90	IL	I	AA	C	91.0	46.6	46.6	150.0	58.0	57.0	5.00/16	abc	1-SD	TS	HS	4	SB	5.43	Sp	N	M	1708
Standard Vanguard	4-3.35x3.62	68-4200	127.6	6.70	IL	I	AA	C	94.0	51.0	54.0	166.0	69.0	64.0	5.75/16	abcde	1-SD	P	HS	3	Hy	4.62	Sp	Fr	H	2625
Sunbeam-Talbot 90	4-3.19x4.33	70-4000	138.2	6.45	IL	I	AA	C	97.5	47.5	50.5	167.5	62.5	60.8	5.50/16	abce	1-Do	P	HS	4	Hy	3.90	Sp	Fr	H	2858
Triumph Renown	4-3.35x3.62	68-4200	127.6	6.70	IL	I	AA	C	108.0	51.0	54.0	178.0	64.0	65.0	5.75/16	abcde	1-SD	P	HS	3	Hy	4.62	Sp	Fr	H	2770
Mayflower	4-2.48x3.94	38-4200	76.1	6.80	IL	L	AA	C	84.0	45.0	48.0	154.0	62.0	62.0	5.50/15	abce	1-SD	P	HS	3	Hy	5.12	Sp	Fr	H	2002
Vauxhall Wyvern	4-2.74x3.74	35-3200	88.0	6.40	IL	I	AA	C	97.7	49.1	49.6	164.6	62.0	....	5.00/16	abc	1-Do	P	HS	3	SB	4.62	Sp	Fr	H	2093
Velox	6-2.74x3.94	54-3500	138.0	6.75	IL	I	AA	C	97.7	50.7	50.0	164.6	62.0	....	5.90/15	abc	1-Do	P	HS	3	SB	4.12	Sp	Fr	H	2278
Wolseley 4/50	4-2.89x3.43	49-4400	90.0	7.00	IL	I	AW	VS	102.0	53.0	53.0	169.0	66.0	63.0	5.50/15	abce	1-Ho	P	HS	4	Hy	4.88	Sp	Fr	H	2482
6/80	6-2.89x3.43	71-4000	135.0	7.00	IL	I	AW	VS	110.0	53.0	53.0	177.0	66.0	63.5	6.00/15	abce	2-Ho	P	HS	4	Hy	4.55	Sp	Fr	H	3248

(*Advertisement*)

JET-STREAMED IN LOOKS!



SPECTACULAR IN PERFORMANCE!

It's the demonstrating sensation of 1951!

NEW STUDEBAKER COMMANDER V-8

AMERICA'S NEW 120-HORSEPOWER DRIVING THRILL!

Everyone who drives it wants to drive it home!

1951 Other Foreign Cars

MAKE AND MODEL	ENGINE: Number of Cylinders, Bore and Stroke (In.)	ENGINE: Maximum Brake Hp. at Specified R.P.M.	ENGINE: Piston Displacement (Cu. In.)	ENGINE: Compression Ratio (To —1)	ENGINE: Cylinder Arrangement	ENGINE: Valve Location	ENGINE: Piston Material	ENGINE: Camshaft Drive	GENERAL DATA: Wheelbase (In.)	GENERAL DATA: TREAD Front (In.)	GENERAL DATA: TREAD Rear (In.)	GENERAL DATA: OVERALL DIMENSIONS (In.) Length Including Bumpers and Bumper Guards	GENERAL DATA: OVERALL DIMENSIONS (In.) Width	GENERAL DATA: OVERALL DIMENSIONS (In.) Height—Road to Roof, No Load	GENERAL DATA: Tires (In.)	GENERAL DATA: Oil Pressure to—	GENERAL DATA: Carburetors—No. Used and Type	GENERAL DATA: Cooling System	GENERAL DATA: Shifting Method	GENERAL DATA: No. of Forward Speeds	REAR AXLE: Final Drive Type	REAR AXLE: Gear Ratio (To —1)	REAR AXLE: Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
CZECHOSLOVAKIAN																										
Aero-Minor	2-2.76x3.15	19-3500	37.8	.....	IL	■	....	N	90.0	44.0	41.0	159.0	56.0	57.0	4.75/16	.....	1-....	TS	HS	4	.....	.....	.....	FR	H	1520
Skoda 1102	4-2.60x2.68	32-4000	64.8	6.50	IL	I	AA	C	98.0	47.2	49.2	161.5	59.0	59.8	5.25/16	abc	1-SH	P	HS	4	SB	4.78	TT	FR	H	1980
Tatra Tatraplan	4-3.34x3.38	55-4000	119.0	6.00	HO	I	AA	HG	106.2	51.2	51.2	173.0	65.8	59.8	6.00/16	abc	2-SD	Air	HS	4	SB	4.09	TA	FR	H	2640
FRENCH																										
Ford Vedette	8-2.60x3.10	66-4800	132.0	7.00	V	L	AS	HG	106.0	53.2	54.4	178.0	68.0	62.0	6.40/15	abc	1-DD	P	HS	3	SB	4.33	Sp	Fr	H	2620
Hotchkiss 13-50	4-3.38x3.92	70-4000	141.0	6.20	IL	I	AA	C	115.0	57.1	56.6	187.6	69.6	61.0	6.40/16	ac	1-SU	P	HS	4	Hy	4.37	Sp	Fr	H	2860
20-50	6-3.38x3.94	100-4000	212.6	6.35	IL	I	AA	C	121.8	57.1	56.6	197.0	69.6	61.0	6.50/16	ac	1-SU	P	HS	4	Hy	3.90	Sp	Fr	M	3300
Gregoire	4-3.38x3.54	70-4000	134.0	.....	HO	I	AA	C	98.5	56.7	52.0	.....	.....	.....	5.50/16	ac	1-SU	P	HS	4	Hy	.....	Sp	FR	H	2376
Mathis 666	6-3.50x3.00	80-4000	174.0	6.80	HO	L	AA	C	105.0	53.0	53.0	173.0	70.0	61.0	6.40/15	abc	2-Do	P	HS	6	Hy	4.10	TA	FR	H	2312
Panhard Levassor Dyna 3	2-2.84x2.96	28-5000	37.2	7.50	HO	I	AA	SG	84.0	48.0	48.0	150.5	56.7	61.5	5.70/16	.....	1-SD	Air	HS	4	SB	6.33	....	Fr	H	1276
Dyna 4	2-3.13x2.96	33-5000	45.5	7.50	HO	I	AA	SG	84.0	48.0	48.0	150.5	56.7	61.5	5.70/16	.....	1-SD	Air	HS	4	SB	6.33	....	Fr	H	1276
Peugeot 203	4-2.96x2.88	42-4500	78.5	6.80	IL	I	AA	C	101.5	52.0	52.0	171.0	63.5	61.5	6.00/16	.....	1-Do	TS	HS	4	Wo	5.75	TT	Fr	H	1980
Renault R1062	4-2.15x3.15	21-5000	45.8	7.25	IL	I	AS	HG	82.6	47.6	47.6	142.0	58.3	57.9	5.25/16	abce	1-Do	P	HS	3	SB	4.71	....	FR	H	1232
Simca Sports	4-2.84x2.96	50-4800	74.5	7.75	IL	I	AA	C	95.2	48.5	48.2	161.5	61.0	51.2	5.25/15	abce	1-SD	TS	HS	4	SB	4.44	Sp	Fr	H	1980
515	4-2.84x2.96	40-4400	74.5	6.25	IL	I	AA	C	95.2	48.5	48.2	158.0	58.3	59.0	5.25/15	abce	1-SD	TS	HS	4	SB	4.78	Sp	Fr	H	1914
Talbot Lago T-15	4-3.66x3.90	120-4300	164.0	7.00	IL	I	AA	C	118.1	57.0	55.7	191.0	69.0	60.2	6.00/16	abce	2-Do	P	Pre	4	SB	3.92	Sp	Fr	H	3360
Lago T-26	6-3.66x4.33	160-4200	273.5	7.00	IL	I	AA	C	123.1	56.0	58.5	205.0	70.9	63.0	6.00/18	abce	2-Do	P	Pre	4	SB	3.58	Sp	Fr	H	4070
Lago T-26GS	6-3.66x4.33	190-4200	273.5	8.00	IL	I	AA	C	110.1	54.5	52.4	.....	.....	.....	6.00/18	abce	3-Do	P	Pre	4	SB	3.36	Sp	Fr	H	2420‡
GERMAN																										
BMW 340	6-2.60x3.78	55-3750	120.0	6.00	IL	I	AA	C	113.0	51.2	55.1	.....	.....	.....	5.50/16	abcde	1-Do	P	HS	4	Hy	4.55	TA	Fr	H	1718‡
Ford Standard	4-2.50x3.62	34-4250	71.6	6.60	IL	L	AA	HG	94.0	46.6	48.0	161.0	58.3	63.0	5.00/16	abce	1-Do	TS	HS	3	SB	4.86	TT	N	H	1900
Special	4-2.50x3.62	34-4250	71.6	6.60	IL	L	AA	HG	94.0	46.6	48.0	160.0	58.3	63.0	5.90/15	abce	1-Do	TS	HS	3	SB	4.86	TT	N	H	1975
Mercedes-Benz 170V	4-2.96x3.94	45-3600	107.9	6.50	IL	L	AA	HG	112.0	51.6	52.9	168.5	64.0	63.0	5.50/16	abce	1-Up	P	HS	4	SB	4.12	TT	R	H	1694
170S	4-2.96x3.94	52-4000	107.9	6.50	IL	L	AA	HG	112.0	51.6	55.9	175.0	68.2	64.0	6.40/15	abce	1-Do	P	HS	4	SB	4.38	TT	R	H	1760
170D	4-2.96x3.94	40-3200	107.9	19.00	IL	L	AA	HG	112.0	51.6	52.9	168.5	64.0	63.0	5.50/16	abce	DI	P	HS	4	SB	4.12	TT	R	H	1826
Opel Olympia	4-3.15x2.91	43-4000	90.7	6.00	IL	I	AS	HG	94.3	46.9	49.2	159.4	61.6	62.2	5.00/16	abcde	1-Do	P	HS	3	SB	4.57	Sp	Fr	H	1955
Kapitaen	6-3.15x3.23	80-3500	150.9	6.10	IL	I	AS	HG	106.1	53.1	52.2	181.9	65.4	64.6	5.50/16	abcde	1-Do	P	HS	3	SB	4.30	Sp	Fr	H	2557
Veritas Meteor	6-2.96x2.96	160-6000	122.0	12.00	IL	I	AA	C	88.5	51.2	51.2	.....	.....	.....	5.50/16	abc	3-Do	P	HS	5	StB	Var	TA	FR	H	1210‡
Limousine	6-2.96x2.96	100-5000	122.0	7.70	IL	I	AA	C	113.0	51.2	51.2	167.2	65.0	55.1	5.50/16	abc	3-Do	P	HS	5	StB	....	TA	FR	H	2640
Dyna	2-3.13x2.96	33-5000	45.5	7.20	HO	I	AA	Sh	85.9	48.0	48.0	153.8	57.1	54.4	5.75/16	abc	1-Do	Air	HS	4	StB	....	Sp	R	H	1474
VW (Volkswagen) 10/11	4-2.96x2.52	26-3300	69.0	5.80	HO	I	AS	HG	94.5	50.8	49.2	159.3	60.6	59.1	5.00/16	abc	1-SD	Air	HS	4	SB	4.43	TA	FR	M	1530
2/22	4-2.96x2.52	26-3300	69.0	5.80	HO	I	AS	HG	94.5	53.4	53.5	165.3	66.9	74.8	5.50/16	abc	1-SD	Air	HS	4	SDR	6.20	TA	FR	H	2200
ITALIAN																										
Cisitalia 202B	4-2.68x2.96	55-5500	67.1	7.50	IL	I	AA	BG	94.5	49.6	49.6	.....	.....	.....	5.50/15	abcde	1-Do	P	HS	4	SB	4.10	TT	Fr	H	1080‡
Ferrari 195 Inter	12-2.56x2.32	130-6000	119.0	7.50	V	I	AA	C	98.5	50.0	49.2	.....	.....	67.0	4.00/15	abcde	1-Do	P	HS	5	SB	....	Sp	Fr	H	2090
340 America	12-3.15x2.68	220-6000	207.5	8.00	V	I	AA	C	95.2	50.0	49.2	.....	.....	.....	4.00/16	abcde	3-Do	P	HS	5	SB	....	Sp	Fr	H	2090
212 Export	12-2.68x2.32	150-6500	129.1	.....	V	I	AA	C	88.6	50.0	49.2	.....	.....	.....	4.00/15	abcde	1-Do	P	HS	5	SB	....	Sp	Fr	H	1760
Fiat 500C	4-2.05x2.64	17-4400	34.8	6.45	IL	I	AA	C	78.8	44.0	42.7	128.0	50.6	54.1	4.25/15	abc	1-Do	TS	HS	4	SB	4.87	Sp	Fr	H	1342
1100E	4-2.68x2.96	35-4400	66.5	6.10	IL	I	AA	C	95.4	48.5	48.4	161.5	59.3	59.1	5.25/15	abc	1-SD	TS	HS	4	SB	4.87	Sp	Fr	H	2068
1400	4-3.23x2.60	44-4400	85.0	6.70	IL	I	AA	C	104.2	51.4	52.0	167.0	65.1	61.1	6.00/14	abc	1-SD	P	HS	4	Hy	4.44	Sp	Fr	H	2552
1100ES	4-2.68x2.96	51-5200	66.5	7.50	IL	I	AA	C	95.4	48.5	48.4	.....	.....	.....	5.25/15	abc	1-SD	P	HS	4	SB	4.55	Sp	Fr	H	2046
Lancia Ardea	4-2.56x2.68	30-4800	55.0	6.70	V	I	AA	C	82.5	45.8	46.5	142.2	54.2	59.5	5.00/15	abc	1-....	P	HS	5	Hy	5.30	....	Fr	H	.....
Aurelia	6-2.76x3.00	56-4000	107.0	6.85	V	I	AA	C	112.5	50.5	51.2	174.0	61.5	59.0	5.50/16	abc	1-....	P	HS	4	SB	4.90	....	FR	H	.....
Maserati A6	6-2.60x2.86	65-5000	90.6	7.50	IL	I	AA	C	100.4	50.0	49.4	.....	.....	.....	5.50/15	abc	1-SD	P	HS	4	SB	.....	.....	.....	H	.....
A6-GCS	6-2.84x3.15	140-6000	121.0	.....	IL	I	AA	C	91.0	47.6	45.3	.....	.....	.....	5.50/16	abc	3-SD	P	HS	4	SB	.....	.....	.....	H	.....
4CLT	4-3.08x3.08	250-6000	91.5	6.00	IL	I	AA	SG	98.5	49.2	47.2	.....	.....	.....	(bb)	abc	1-....	P	HS	4	SB	.....	.....	.....	.....	.....

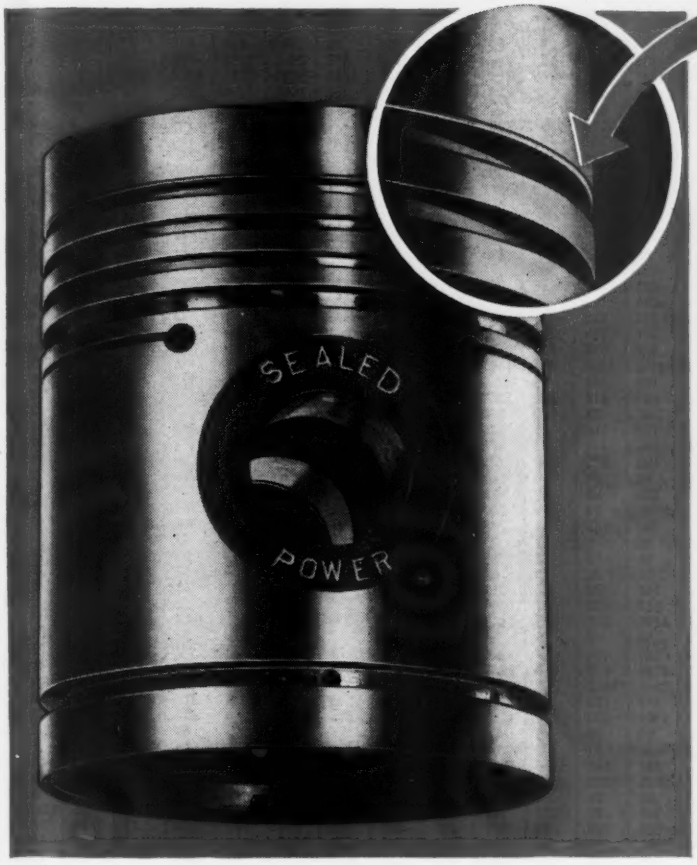
ABBREVIATIONS

••—Front wheel drive.
^^—Supercharged.
‡—Chassis only.
■—Two stroke engine.
a—Main bearings.
b—Connecting rod bearings.
c—Camshaft bearings.
d—Piston pins.
e—Chain or timing gears.
(aa)—Front 5.00/17, rear 6.50/16.
(bb)—Front 5.00/17, rear 6.00/16.
AA—Aluminum alloy.
AS—Aluminum and alloy steel strut.
AT—Alloy, tin plated.
AW—Alloy, wire wound.
BG—Bevel gear.
C—Chain.
CH—Chain and helical gear.
DD—Dual downdraft.
DI—Diesel injectors used.
Do—Downdraft.
DU—Dual updraft.
F—F-head, valves in side and head.
Fr—Front.
FR—Front and rear.
H—Hydraulic.
HG—Helical gear.
HM—Hydraulic front, mechanical rear.
Ho—Horizontal.
HO—Horizontally opposed.
HP—Hand and preselected shift.
HS—Hand shift.
Hy—Hypoid.
I—I-head, valves in head.
IL—In line.
L—L-head, valves at side.
M—Mechanical.
MH—Mechanical and hydraulic.
N—No or none.
P—Pump.
Pr—Preselective.
R—Rear.
RA—Radius arms.
SB—Spiral bevel.
SD—Single throat downdraft.
SDR—Spiral bevel, double reduction.
SG—Spur gear.
Sh—Shaft.
SH—Single throat horizontal.
Sp—Springs.
ST—Single throat.
StB—Straight bevel.
SU—Single throat updraft.
TA—Torque arm.
TP—Thermo syphon and pump.
TS—Thermo syphon.
TT—Torque tube.
Up—Updraft.
V—Vee type.
Var—Various.
VS—Vertical shaft.
Wo—Worm.

Sealed Power

PAX EBONITED PISTONS

are the only pistons made in which section of greatest wear can be replaced!



Every PAX Piston Equipped with GI-60 Contracting Groove Insert!

Every Sealed Power PAX Piston comes factory-equipped with the famous Sealed Power GI-60 Contracting Groove Insert—the only dependable, economical, long-lasting preventive of top ring groove wear!

This is a feature of vast importance to every fleet operator, because the top ring groove is the part of every piston that wears out first—the part subject to the greatest heat and the greatest pressure, and the part protected by the least lubrication.

By installing the Sealed Power GI-60 in every PAX Piston, Sealed Power has added thousands of miles of service!

Sealed Power PAX Pistons are manufactured from genuine Lo-Ex* Virgin Aluminum Alloy with silicon base, which dissipates heat most efficiently. Special Eboniting process assures smoother-running engine because piston surface is oil-impregnated, oil-absorbing. T-slot design, cam-ground, with rugged internal construction for extra strength and fast heat transfer.

*Registered trade mark of Aluminum Co. of America.

Write for name of nearest distributor

SEALED POWER CORPORATION
MUSKEGON, MICHIGAN

Always use Sealed Power parts for best results

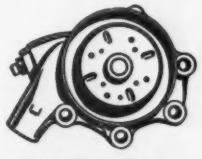


HEAVY DUTY PISTONS—Aluminum or cast iron as indicated; exclusive T-slot design, cam ground, ruggedly designed, heat treated. Equal to or better than original equipment.



WET OR DRY SLEEVES—Machined from closely controlled castings, with exceptionally fine grain and dense molecular structure for long wear.

VALVES—Sealed Power Valves and valve parts are made from the correct grade of chrome nickel alloy steel for each engine, for finest performance and maximum service.



WATER PUMPS—Manufactured from finest quality materials to highest standards. Our line is complete.



KING BOLTS & BUSHINGS—Manufactured from highest quality forgings, and heat treated to meet your exact requirements.



TIE RODS & SHACKLES—Sealed Power Tie Rods, Spring Shackles, and Front Wheel Suspension Parts meet specifications of original equipment.

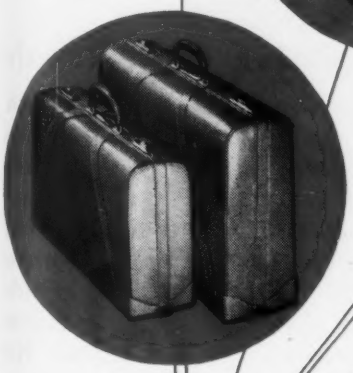
New Car Registrations by Makes by States*

STATE AND MONTH		Buick	Cadillac	Chevrolet	Chrysler	Crosley	De Soto	Dodge	Ford	Henry J	Hudson	Kaiser-Frazer	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	All Others	Total
Alabama	March	489	72	1602	132	9	77	273	1349	99	62	37	36	258	93	313	52	646	392	270	29	10	6,300
	3 Mos.	1288	217	4254	362	19	261	824	3478	259	192	121	89	814	262	768	155	1663	1124	688	66	30	16,934
Arizona	March	156	35	452	46	4	19	93	290	23	41	20	8	75	45	87	25	138	137	87	11	16	1,809
	3 Mos.	462	98	1177	112	15	72	248	971	50	142	65	22	250	134	251	89	372	331	301	25	35	5,222
Arkansas	March	314	67	1068	71	5	64	230	799	59	78	68	13	180	86	215	36	505	249	138	42	2	4,289
	3 Mos.	878	159	3103	248	16	291	619	2137	177	216	176	47	559	253	533	123	1474	834	440	107	5	12,395
California	March	3464	915	7575	1506	30	1005	1766	6348	342	858	270	167	1748	1014	2519	488	3597	2330	1654	164	480	38,216
	3 Mos.	9118	3065	22570	4119	97	2632	5941	18105	927	2657	838	645	6056	3389	6296	1498	10992	7365	5925	488	1538	114,231
Colorado	March	551	94	1107	180	19	101	289	961	49	237	44	32	268	155	318	64	526	319	159	42	7	5,522
	3 Mos.	1421	250	2834	407	41	228	727	2141	103	537	110	84	638	392	723	192	1195	815	414	111	17	13,380
Connecticut	March	662	182	1659	304	101	149	481	1293	199	220	106	38	392	174	539	147	817	533	356	49	71	8,383
	3 Mos.	1636	485	4212	619	23	383	1101	3030	398	474	259	108	985	472	1256	359	1616	1378	921	143	192	20,080
Delaware	March	151	31	311	39	1	22	01	353	27	33	19	8	80	23	113	13	131	111	84	11	5	1,653
	3 Mos.	402	79	993	98	9	72	286	887	54	77	51	26	202	83	289	37	327	373	268	23	11	4,627
Dist. of Col.	March	194	63	539	117	2	50	172	410	44	55	15	15	94	38	178	24	488	152	70	12	13	2,743
	3 Mos.	571	200	1696	280	4	121	417	1191	83	122	36	47	294	125	465	90	1033	580	227	28	55	7,625
Florida	March	688	213	1785	244	54	121	431	1654	209	148	88	73	488	168	405	138	982	772	233	113	132	9,179
	3 Mos.	2157	603	5064	721	168	386	1180	4215	604	427	288	231	1490	484	1276	429	2183	2093	764	298	450	25,499
Georgia	March	720	106	1944	196	22	95	379	1764	109	128	93	70	461	126	443	122	760	833	409	64	23	8,871
	3 Mos.	2360	391	6816	616	50	363	1417	5655	364	373	345	297	1845	404	1289	389	2401	2817	1334	180	103	29,570
Idaho	March	231	33	405	56	.....	64	116	311	21	84	37	10	84	66	100	31	189	134	142	27	3	2,144
	3 Mos.	635	98	1297	152	2	138	306	942	55	214	122	35	293	211	275	98	584	445	431	77	7	6,417
Illinois	March	2996	583	5871	1090	36	753	2198	4304	301	1352	552	158	1450	855	1883	573	3915	1738	1164	98	64	31,912
	3 Mos.	7990	1722	17885	2419	72	2103	5586	12115	720	3445	1323	486	4277	2453	4788	1545	9348	5723	3402	228	111	88,339
Indiana	March	1314	270	4180	524	20	379	1028	3147	235	550	265	67	658	492	985	255	1950	1164	1248	66	8	18,808
	3 Mos.	3292	653	10220	1130	47	917	2395	7347	544	1214	643	212	1638	1219	2156	607	4503	2958	3323	167	21	45,206
Iowa	March	867	116	2155	294	3	160	594	1912	75	154	115	30	388	250	528	124	1176	658	319	24	2	9,944
	3 Mos.	2106	368	6344	689	13	435	1447	4923	177	459	397	100	1254	664	1275	334	2816	1745	924	63	4	26,517
Kansas	March	695	110	1701	202	10	137	430	1442	74	229	128	37	376	232	409	105	821	537	262	16	5	7,958
	3 Mos.	1516	260	4180	449	25	338	977	3319	182	519	279	96	930	573	830	255	1695	1178	645	49	6	18,301
Kentucky	March	425	84	1686	183	6	89	355	1318	85	88	56	18	217	134	363	76	630	439	222	54	6	6,504
	3 Mos.	1230	238	4291	465	16	281	931	3649	154	239	143	60	659	393	886	202	1762	1162	680	111	18	17,570
Louisiana	March	379	81	1476	119	8	98	285	1149	66	60	55	20	215	63	227	48	607	354	212	26	5	5,553
	3 Mos.	1047	251	4093	360	20	290	751	3016	201	163	202	63	646	200	627	153	1656	1078	647	79	8	15,561
Maine	March	217	35	566	71	6	33	121	449	33	50	53	9	119	68	137	35	278	173	91	29	6	2,579
	3 Mos.	706	128	1432	211	11	138	416	1047	63	124	92	55	271	171	423	75	743	459	257	66	14	6,907
Maryland	March	568	104	1741	262	8	134	421	1379	138	225	81	28	297	194	446	114	886	446	278	35	18	7,783
	3 Mos.	1506	295	5276	604	24	378	1199	3753	395	534	211	104	901	540	1067	332	2171	1302	804	100	60	21,558
Massachusetts	March	1225	247	3248	483	21	336	869	2342	124	281	125	68	559	311	1148	175	1622	986	483	60	57	14,768
	3 Mos.	3037	744	8080	1149	47	980	2175	6197	346	851	325	205	1691	911	2930	501	3812	2752	1416	207	171	38,307
Michigan	March	3169	982	9343	1097	12	600	1788	8308	570	822	513	132	1521	649	2310	456	3601	3204	888	74	12	40,029
	3 Mos.	8283	2880	23324	2331	31	1721	4706	21242	1202	2318	1306	454	4545	1742	5364	1216	9287	8247	2440	186	37	102,864
Minnesota	March	848	131	2098	323	2	235	696	2106	103	166	146	24	254	218	512	135	1085	649	423	31	6	10,191
	3 Mos.	2676	489	6939	991	10	810	1922	6245	293	584	618	139	1362	765	1576	486	3585	2233	1387	98	11	33,199
Mississippi	March	330	61	1084	87	3	63	187	767	49	43	39	15	157	35	169	30	420	223	123	9	1	3,895
	3 Mos.	1060	186	3033	315	13	194	531	2150	136	125	119	46	484	162	482	109	1302	737	409	43	9	11,611
Missouri	March	975	190	2856	359	9	276	642	2212	94	180	114	45	571	423	597	125	1485	736	343	57	8	12,297
	3 Mos.	2672	515	9077	997	26	852	1834	6200	250	505	379	150	1774	1267	1709	457	4188	2235	1100	138	23	36,628
Montana	March	243	42	631	86	.....	47	152	455	28	86	21	10	110	47	173	48	267	194	96	28	2	2,764
	3 Mos.	521	92	1489	176	.....	106	317	1044	60	235	57	30	276	121	369	104	558	451	232	65	4	6,307
Nebraska	March	459	82	1135	170	6	72	183	1061	24	121	53	19	200	83	284	76	492	370	151	21	1	5,023
	3 Mos.	1313	237	3566	423	14	201	617	2981	91	355	197	74	748	280	688	230	1420	1169	506	67	3	15,176
Nevada	March	50	12	88	33	2	10	26	106	6	16	2	3	25	8	40	19	63	29	52	3	.....	593
	3 Mos.	148	48	302	82	3	38	121	256	12	39	12	13	65	24	92	51	186	93	105	13	1	1,724
New Hampshire	March	129	20	429	42	4	24	84	291	30	52	32	10	67	57	90	35	173	129	62	17	7	1,784
	3 Mos.	415	67	1276	137	9	68	283	787	57	143	83	23	217	165	273	94	455	387	189	64	23	5,195
New Jersey	March	1755	398	3883	696	15	376	1301	3105	441	542	420	87	1036	404	1339	351	1784	1372	680	127	107	20,199
	3 Mos.	4041	1046	9652	1541	53	946	3084	7361	874	1277	882	278	2498	1045	2859	913	3690	3489	1824	384	227	47,724
New Mexico	March	143	28	338	45	5	23	85	233	7	38	12	9	58	33	83	23	116	79	52	8	1	1,419
	3 Mos.	568	83	1285	171	14	108	270	838	44	158	54	42	300	125	309	79	452	420	287	49	3	5,619
New York	March	4247	954	7965	1499	40	1246	3205	6800	712	1109	639	216	1941	1003	3033	692	3928	2882	1422	262	233	44,076
	3 Mos.	10409	2732	21153	3844	122	3094	7720	17234	1548	2801	1817	711	5048	2686	7073	1923	9109	8821	4207	913	1026	113,691
North Carolina	March	814	134	2354	211	15	151	604	2046	216	149	122	38	456	158	452	140	1022	643	332	41	29	10,127
	3 Mos.	2454	409	7300	555	42	479	1469	5222	553	391	357	131	1354	453	1241	383	2490	1936	948	109	85	28,366
North Dakota	March	143	18	489	71	.....	58	73	393	8	39	25	6	64	38	97	34	227	105	67	5	.....	1,960
	3 Mos.	457	59	1437	187	1	166	273	1228	29	102	81	22	207	103	258	114	698	382	219	30	.....	6,053
Ohio	March	2877	786	8354	1312	56	747	2300	6020	581	880	516	168	1348	693	2082	499	3789	2538	1264	168	23	35,979
	3 Mos.	7825	2031	22242	2953	141	2146	5963	16807	1150	2128	1285	470	4082	1887	5396	1431	9826	6776	3354	454	63	98,390
Oklahoma	March	456	94	1490	113	1	112	260	1122	17	66	2*	24	217	110	334	48	650	315	157	10	2	5,622
	3 Mos.	1259	305	4490	312	12	323	739	3255	59	197	72	77	787	291	751	167	1798	1051	548	58	5	16,552
Oregon	March	622	89	1600	261	10	135	403	1083	110	205	109	39	331	251	442	122	734	447	359	67	44	7,483
	3 Mos.	1203	189	3504	475	19	317	748	2212	190	389	220	86	746	540	785	253	1412	965	776	132	93	15,254
Pennsylvania	March	2855	457	7068	1355	48	885	2565	5635	587	916	502	149	1534	867	2184	657	4234	2002	1243	210	39	35,990
	3 Mos.	7490	1398	19892	2964	104	24 1	5972	14630	1294	2120	1201	484	3906	2256	5113	1550	10285	6189	3372	541	119	93,379
Rhode Island	March	122	37	400	62	3	27	139	321	22	37	24	12	96	44	112	23	194	121	63	6	6	1,871
	3 Mos.	487	153	1585	227	6	152	412	1285	70	125	71	38	292	154	458	85	591	426	226	23	28	6,894
South Carolina	March	415	57	1283	81	3	76	265	947	52	64	37	22	212	80	223	62	470	289	132	18	13	4,941
	3 Mos.	1231	224	4196	254	14	261	782	2717	221	181	125	72	618	240	684	187	1274	910	422	48	43	14,704
South Dakota	March	151	20	444	56	.....	29	84	313	30	65	37	13	63	38	90	35	158	99	81	11	.....	1,817
	3 Mos.	510	82	1432	179	.....	136	294	992	84	186	142	36	294	144	398	142	578	433	243	33	.....	6,249
Tennessee	March	863	115	2518	202	25	129	447	1851	81	222	134	44	317	236	488	130	970	748	422	60	18	10,020
	3 Mos.	1992	315	5974	486	67	392	1177	4504	156	461	207	82	808	452	984	295	2310	1726	920	105	77	23,490
Texas	March	2035	376	5442	573	24	299	1116	4301	140	388	164	111	1201	357	1302	219	2073	1553	805	87	18	22,564
	3 Mos.	8444	1495	21130	2295	79	1413	4323	14427	641	1210	617	511	4747	1380	4325	930	8558	6470	3194	343	65	87,097
Utah	March	220	32	445	63	3	54	107	405	16	127	35	12	73	44	143	30	180	162	128	20	3	2,302
	3 Mos.	641	101	1130	155	3	148	289	1154	34	329	88	35	299	142	380	88	503	503	412	45	6	6,485
Vermont	March	75	15	208	19	4	14	40	148	18	25	26	5	43	40	60	18	84	85	39	20	2	968
	3 Mos.	215	40	600	52	6	44	115	412	32	57	43	13	113	90	156	58	240	222	90	61	5	2,864
Virginia	March	538	111	1903	185	12	103	378	1546	128	194	80	29	327	135	400	121	839	513	277	38	46	7,901
	3 Mos.	1993	382	7028	638	45	448	1344	5520	408	650	306	153	1177	433	1346	401	2732	1953	1063	116	149	28,295
Washington	March	564	84	1561	249	7	175	417	1159	68	173	136	21	233	212	345	85	692	380	328	31	70	6,990
	3 Mos.	1692	244	4490	689	35	507	1192	3256	183	439	363	82	830	712	1183	300	2172	1234	1104	124	200	21,031
West Virginia	March	302	47	1050	161	7	75	294	697	48	64	34	11	143	69	224	71	471	291	163	47	5	4,274
	3 Mos.	869	142	2808	354	16	196	765	1936	103	191	100	45	432	199	544	204	1301	794	436	112	11	11,558
Wisconsin	March	1168	173	2386	408	9	266	800	1886	101	386	188	44	497	676	838	166	1278	784	520	36	13	12,622
	3 Mos.	2985	491	6706	912	23	719	1799	4489	220	905	466	132	1348	1578	2002	468	3135	2203	1425	98	33	32,135
Wyoming	March	95	19	250	29	.....	19	48	208	2	38	10	5	41	18	76	16	94	69	28	14	.....	1,079
	3 Mos.	391	73	862	98	.....	70	179	613	18	103	43	14	137	76	206	61	346	273	114	47	1	3,725
Total	March, 1951	42969	8985	110166	15967	597	10212	29379	88497	6592	12124	6423	2228	21521	11619	29886	7088	52175	33468	18561	2494	1648	512,599
Total	March, 1950	48768	7631	121764	5022	616	3637	10633	108157	.....	12609	3995	2889	28898	14549	34797	6776	12921	38788	29942	2407	1086	495,885
Total	3 Mos., 1951	117602	26810	313499	39963	1627	29333	78183	239115	15868	31483	17335	7455	65175	32820	75550	20222	137517	98980	55321	7097	5207	1,416,162
Total	3 Mos., 1950	109907	14211	305921	26080	1694	18893	52079	259612	.....	30710	9765	7141	66866	31346	80982	15462	85334	966588	65212	6035	2799	1,286,437

* Data from R. L. Polk & Co.

5,280 *Free Gifts* TO DEALERS AND SERVICE MANAGERS FROM fendix®







FENDIX UNDERCOATING PAYS OFF

Join the thousands of dealers and service managers who are pleasing customers and earning wonderful gifts just by undercoating with FENDIX. Thousands of gifts like the ones shown above can be yours free. Dealers prefer FENDIX because its new merchandise award plan keeps service managers and salesmen plugging for profitable undercoating sales. Yes . . . The FENDIX merchandise award plan can help you develop your undercoating business.

TOP QUALITY

You take no chances with FENDIX. It's made by the industry's largest producer of rust-proofing materials. Your customer gets maximum protection for his investment. You make added profits because FENDIX contains more solids and thus gives greater coverage per drum. FENDIX protects profits by reducing free service time spent in eliminating new car squeaks and rattles. And FENDIX gives you a car with a higher resale value when your customers come around to trade.

INVESTIGATE TODAY

Join the thousands of dealers who are making extra profits with FENDIX. Get all the facts on the FENDIX merchandising award plan from your jobber or write direct to Nox-Rust Chemical Corporation. Be sure to do it today and start cashing in on extra profits right away.

NOX-RUST CHEMICAL CORPORATION
2433 S. Halsted Street, Chicago 8, Illinois
Eastern Division, 201 Davison Chemical Building, Baltimore 1, Maryland
Western Division, 725 Second Street, San Francisco 7, California

Shop Kinks

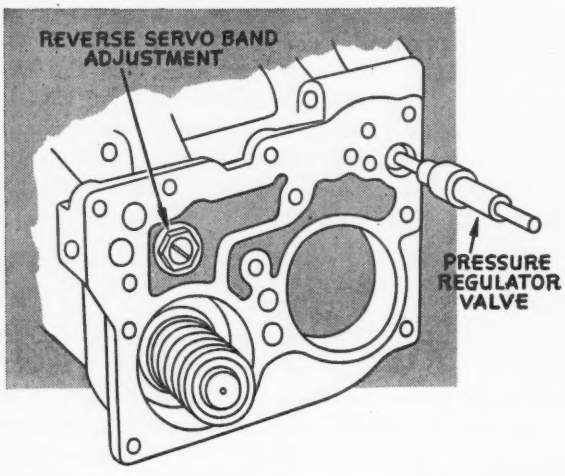


$25 FOR THE BEST KINK PUBLISHED EACH MONTH

$5 FOR ALL KINKS PUBLISHED EACH MONTH

If you've come upon an original idea for making a job easier, a special tool, short cut on a job or any trick of value to other readers, write it down and, if necessary, make a rough sketch. Just make it clear. Send it to Motor Age. If we can use your Kink it may bring five, possibly 25 dollars.

Best Kink of the Month



Powerglide Regulator Valve Repair

This is a quick method of freeing a stuck pressure regulator valve on the Chevrolet Powerglide. Disconnect the oil cooler lines at the rear of the transmission and move them to the side. Then remove the modulator, the servo cover, reverse servo spring and pressure regulator valve. With some fine grinding compound on a piece of cloth, remove the burrs and scratches from the valve. Be certain the valve works freely in the valve body. ***George Matrone, Roy Stauffer Chevrolet Sales Service, Scranton, Pa.***

Correcting High Speed Vibration in Fords

Some 1949 and 1950 Fords have an excessive rumble and vibration at speeds around 60 to 65 mph. This vibration is due to the driveshaft running at a slight angle to the transmission shaft, causing the front universal to bind. The noise is worse when the car is loaded. This is how I solved the problem. Remove the floor board and raise the rear of the motor and the transmission. Install a one inch spacer between the transmission mount and the transmission. Use long bolts at the mount. The floor pan may have to be jammed up to clear the transmission. Heat the exhaust pipe near the motor to relieve the stress at the exhaust manifold. Check for clearance at the radiator which is usually O. K. The driveshaft must be parallel to the transmission. *Morton Hess, Nevada, Iowa.*

Cork in Steering Post Protects Horn Wire

I have had trouble with the horn button wire on some Dodge and Plymouth cars. It twists off at the horn button terminal due to the terminals following the wheel as it is turned. This puts a strain on the wire where the terminal is soldered. To solve this, take a cork just large enough to fit tightly in the steering tube and then drill a hole just large enough for the wire to be pulled through. Now thread the wire through the cork and solder the terminal on the wire. Place the cork in position in the steering tube, according to the type button contact used. *Kirk Dillon, Matchett Garage, Brenham, Texas.*

(*Continued on page* 82)

CUSTOMER SATISFACTION

is assured with PERFECT CIRCLE NURLIZING



From coast to coast the word comes in—Nurlizing is the best method of sizing pistons known today—and it gives customers better overhauls at lower cost!

Because with Nurlizing, worn pistons can be accurately and permanently sized for close correct fit in cylinders without danger of scuffing or scoring. This restored fit means restored power—elimination of piston slap—better lubrication of pistons and cylinder walls—and the solid satisfaction that keeps your customers coming back to you!

Get the whole story on Nurlizing profits today! Call your Perfect Circle Distributor, or write The Perfect Circle Corporation, Hagerstown, Ind.

Only Nurlizing Gives You These Seven Advantages:

1. **Increases piston diameter to exact predetermined size quickly, accurately, *permanently.***
2. **Permits closer fit without danger of scuffing or scoring.**
3. **Eliminates piston slap, stabilizes pistons and increases ring life.**
4. **Better piston and cylinder lubrication with interrupted surface.**
5. **Is equally effective on new or used—cast iron or aluminum pistons.**
6. **Enables Doctors of Motors to do a better overhaul at a lower price.**
7. **Nurlizing stimulates more overhauls—more profits for dealers.**

PERFECT CIRCLE NURLIZING

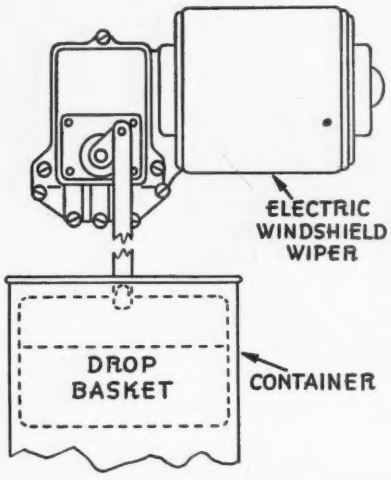
Your Perfect Circle Jobber Has Nurlizing

NEW LIFE for old pistons **—LONGER LIFE** for new pistons

Shop Kinks . . . . . Continued from Page 80

Wiper Motor Makes Agitator For Auxiliary Parts Cleaner

When one of our mechanics needed an extra small parts cleaning tank on his bench, in addition to our large unit, we constructed one with a five-gallon can, a metal



basket and an old electric windshield-wiper motor. The motor is run off a regular car battery, and it does a good job of agitating small parts. *G. A. Hinkel, Hinkel's Service, 9321 Wade Park Ave., Cleveland, Ohio.*

Quick Repair for Stiff Window Regulators

On Plymouth cars with stiff operating window regulators, try this. Remove the remote control door handles and the window regulator crank. Remove the door panel upholstery. Now, using a hammer and punch, strike a few sharp blows close around the regulator operating shaft. Replace the handles and upholstery and you may have saved the time and expense of installing a new regulator. *C. O. Wood, General Delivery, Buckeye, Arizona.*

Removing Hudson Camshaft Without Removing Valves

The 1948-1951 Hudson Six camshaft can be removed without removing the valves or valve springs. Obtain some 5/16 in. cold roll rod. Cut twelve 1⅛ in. pieces and grind off the burrs. Then rotate the engine until a valve lifter is full up and then pry up the spring an additional ¼ in. Insert the cold roll between the block and the valve spring. Tie a rubber band around the lifter and the cold roll to prevent the lifter from rolling in the oil pan. It is possible to do all 12 valves in this way. *Ray Trestik, Hudson Motors, Barrington, Ill.*

Timing Light Can Be Used To Straighten Fan Blades

I have a method of straightening mis-aligned fan blades that we have used successfully a number of times. I take a piece of chalk and rub it around the outside edges of each blade. Then put a different number on the flat part of each blade with the chalk. Next, I take a timing light and hook it up as if to set the ignition timing. Run the engine, aim it at the fan blades and it will stop each blade for a split second. The one or more blades that are bent will be seen easily. *Norman Dikdan, 155 W. Gould Avenue, Paterson, New Jersey.*

Magnet Speaker Used for Adjusting Voltage Regulators

For the shops that have a permanent set-up for adjusting voltage regulators off the car, a small four or five inch permanent magnet speaker, with the output transformer removed, can be used to hear the frequency or vibration of the contacts. A steady buzz indicates the points are in good condition. A sharp machine gun noise indicates an open resistor. An erratic buzz will show up burnt or dirty points. It's very helpful in many ways and we wouldn't be without it. The size of the condenser will determine the volume. *Walter Baker, c/o Columbus Ignition Co., 211 Neilston St., Columbus, Ohio.*

Clothespins Hold Door Seals While Cement Dries

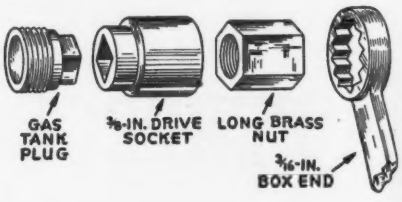
In reconditioning used cars very often the door sealing rubbers are worn out and we have quite a few customers requesting replacements of these. So after removing the door I bought a box of pinch type clothespins, put cement on the door and put the pins on as I lay the rubber on which holds the rubber securely in place till dry. *George Wise, Lebanon, Penna.*

Spray Gun Makes Fire Extinguisher for Welding

A paint spray gun can be used for other jobs besides painting. When welding where there is a danger of fire, I fill a gun with water and use about 90 pounds pressure. This makes a very efficient extinguisher and perfectly harmless to upholstery. In hot weather when welding inside a car I spray water around at intervals and this makes a cooler place to work. With a helper using the gun, you can torch weld very close to anything which might burn and time is saved by making it unnecessary to remove material. *Clifford Brown, 210 E. Pine Street, Clearfield, Pa.*

Getting the Drain Plugs Out of Buick Gas Tanks

The Buick gas tank drain plugs are square and usually quite tight. If you use an ordinary wrench on them, it will take the corners off the nut. Take a ⅜ in. drive socket



and slip the square end over the plug. Then take a 9/16 in. nut like Chevrolet puts on their exhaust pipe flange (brass ones are quite long) and slip that nut on the other end of the socket and a box end on the brass nut. Then it comes out. *Herman A. Kruger, Larson Chevrolet Company, Tomah, Wisconsin.*



"I'm sold on Original Factory Parts"

"It's been 17 years, now, that I've handled Original Factory Parts. In that time I've done thousands of different service jobs and not once have I ever felt doubtful about the service work I've done. My business isn't the biggest in town, but my reputation for good service work is second to none. It's a wonderful feeling to know the quality of your work matches the quality of the parts you handle. I'm sold on Original Factory Parts."

Karl R. Sidle, 5910 West Pico, Los Angeles, California

The outstanding customer satisfaction Auto-Lite Original Factory Parts afford service men is proved by this fact: more than half of America's car makers specify Auto-Lite. Make the wise choice of original factory parts and protect your honest workmanship . . . and build your profits and your business. For full information, write direct to

THE ELECTRIC AUTO-LITE COMPANY
Toledo 1 *Parts & Service Division* **Ohio**



"Tested Quality" **HELPS YOU DELIVER AMERICA'S FINEST ELECTRICAL SERVICE**

From blueprint to finished product, constant inspection and testing of all Auto-Lite Original Factory Parts assures quality of unfailing dependability . . . and is proven by exhaustive tests of leading automotive engineers who specify Auto-Lite as Original Factory Equipment on leading makes of many of America's finest cars and trucks.

ORIGINAL
AUTO-LITE
SERVICE PARTS

TUNE IN "SUSPENSE" . . . CBS RADIO THURSDAYS . . . CBS TELEVISION TUESDAYS

Reader's Clearing House

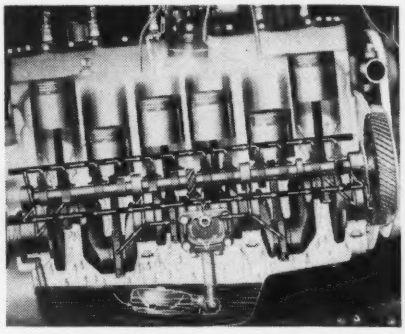
The Problem:

I have a 1941 Studebaker that I have done work on and the oil pressure drops after it gets hot. This motor got water in it and ruined the pistons, so new ones were put in with four new rods.

What We Did: We tightened the pistons and rods. The mains were checked. I did nothing to the oil pump. Pressure goes to 40 pounds when starting but after about 12 miles of driving it drops to 20 or so. We made an oil pressure test on this. It opened the relief valves and the pressure test was made and everything checked fine. Could it be the oil pump or the main? **Submitted by:** Wm. Boyle, Scranton, Pa.

We Suggest . . .

The trouble you are experiencing with the oil pressure on your '41 Studebaker is very interesting, particularly when you have made such a thorough check in order to find the trouble. Assuming that you have made the oil test on this correctly, it would seem that the bearings are in good shape. This

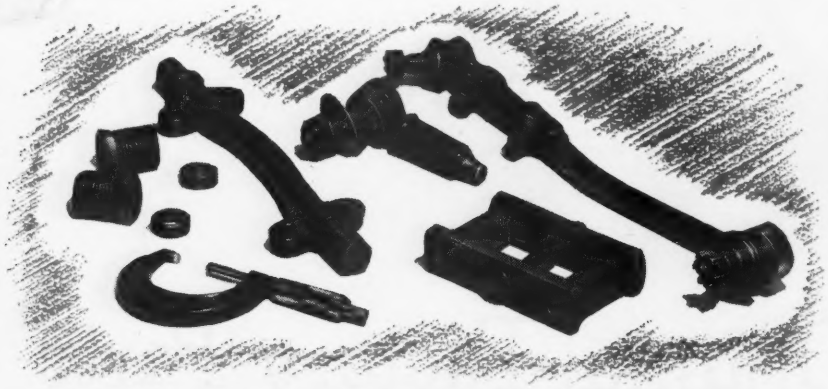


test would also show a crack in the oil line and I think that quite possibly the cause of your trouble is in the oil pump and if so I would strongly recommend installing a new oil pump or rebuilding the old one. In connnection with the oil leak test, did you use light oil? Some mechanics use the regular engine oil which they have heated up to operating temperature. But this is rather difficult to do, so the accepted practice is to thin out some oil with kerosene.

The Problem:

Please advise us what to do with a Case CT tractor engine that is in the habit of scoring pistons and sleeves. It will score one or two cylinders in 5 to 200 hours service after new pistons have been installed. It doesn't always score the same cylinders. Sometimes it will be 1 and 2, 3 or 4, or even 1 and 4. This engine is of the conventional type four cylinders with full pressure lubrication. Bearings are in excellent condition. All the oil lines and the pump are perfectly clean and in perfect condition. The engine maintains 45 pounds pressure.

(*Continued on page* 86)



In Chassis Parts...Master Automotive Mechanics Prefer MONMOUTH for Savings and Safety

YOU save time in installation with Monmouth Chassis Parts. They are machined to close tolerances from correct analysis steel and heat treated to meet original equipment specifications.

The line is complete. It includes king bolt sets, shackles, tie rod ends and drag links, tie rod and drag link assemblies, knee-action coil springs, and independent front wheel suspension parts.

N. A. P. A. Jobbers coast to coast give Minute-Man service on the Monmouth line.



Bearings



King Bolt Sets



Clutch Plates and Parts



FREE FRONT END CHART

Wall size. Data on all popular cars.

Name_____

Street_____

City_____ State_____

Write to

THE CLEVELAND GRAPHITE BRONZE CO.

REPLACEMENT SALES DIVISION

6545 Carnegie Ave. • Cleveland 3, Ohio

The KING LINE makes Dollars and Sense because it's complete!





Get One-Stop service—get the Complete Line—get the line that has made money for others for thirty-one years.

KING QUALITY PRODUCTS

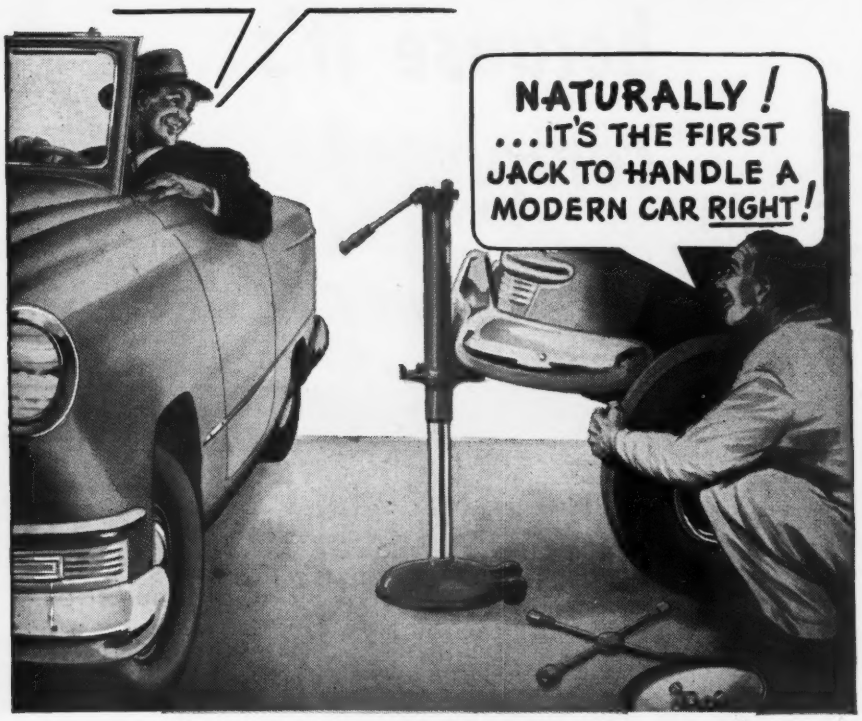
PISTONS • PINS • VALVES • BEARINGS • WATER PUMP PARTS • BOLTS
BUSHINGS • SILENT-U SHACKLES • SLEEVES • WHEEL SUSPENSION PARTS

"BUILDING FOR THE FUTURE ON A 31-YEAR RECORD"

KING QUALITY

SAINT LOUIS 10, MISSOURI

"EVERYWHERE I GO I SEE LIFT-POST"®



Thousands of LIFT-POSTS are now in action. And you'll see thousands more! All other jacks are out-dated for quick wheel service on modern cars. Hydraulic LIFT-POST not only gets the car *up* faster . . . *Deep-skirted fenders go up, too!* The whole wheel is exposed. You are free to work fast — do better work — and boost profits on flat-rated jobs and other service. **And LIFT-POST costs less than a curb jack.** Get one or more from your Jobber NOW!

Make more money on jobs like these:

- Changing tires
- Washing wheels
- Washing under fenders
- Putting on chains
- Changing wheels
- Emergency road calls
- Fender and body work
- Inspecting brakes
- Packing wheel bearings
- Installing tail pipes
- Locating squeaks

A product of Blackhawk Mfg. Co., Dept. J-661, Milwaukee 1, Wis.

BLACKHAWK

"PORTO-POWER" • HYDRAULIC JACKS • WRENCHES

Clearing House

Continued from Page 84

What We Did: We have changed the oil pressure gage thinking that old one wasn't reading correctly. Bearings were tested with a tank pressure tester and all the mains and rods hold pressure with enough passage to shrow a sufficient amount of oil to the cylinders. I even put additional shims in the rod bearings to cause them to throw a surplus amount of oil to the cylinders but it doesn't seem to make any difference. **Submitted by:** J. A. Chavam, 1245 17th Ave. W., Eugene, Ore.

We Suggest . . .

The trouble with that Case tractor which is scoring pistons and sleeves, I gathered from reading your letter that it could be located by making a pressure test on the bearings. But I see that you have already made such a test. Since you get sufficient lubrication and assuming that you are using a good quality of oil, I am inclined to believe that your trouble might be caused by a clogged water jacket. This will result in local hot spots and will consequently distort cylinders. I recommend that you thoroughly flush out the engine water jacket.

I think it would be a good thing to disconnect it from the radiator and use a strong solution and endeavor to loosen all the possible sludge and scale. After the solution has been in the water jacket for a day or so, I would follow this with a forced flushing under pressure with clear water to remove all traces of this solution. I would also recommend that when tightening the bearings, also the cylinder head nuts, use a torque wrench so as to avoid any possibility of distorting the cylinders. Another thought occurred to me and that is the possibility of dirt and abrasive entering the engine.

I would suggest that you make sure the air cleaner is clean. You might also overhaul the carburetor since the mixture may be too rich, allowing the gasoline to wash the oil off the cylinder wall.

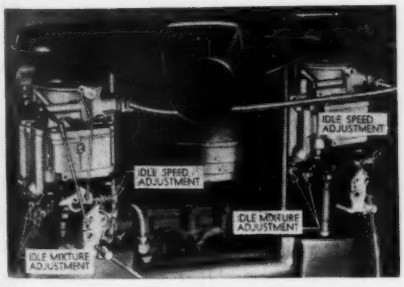
The Problem:

We are having trouble with a '42 Buick with it not idling properly. The car will not idle down or drive down a road without jerking at speeds of between 10 to 12 miles per hour.

What We Did: We have done what we thought might cure this condition. We have checked the valves and the timing; also the spark plug gaps and also checked for air leaks. We ground the valves and adjusted the clearance according to factory specifications. We have checked both carburetors. We checked the complete ignition system without making any change in the operation of the unit. We have tried several different types of spark plugs and that doesn't make any change either. At speeds above 12 miles per hour, it runs perfectly, but at idle the motor is very rough. **Submitted by:** Weinquist Auto Repair, Broken Bow, Neb.

We Suggest . . .

I am quite sure that you will find the trouble you are experiencing with your '42 Buick to be caused by the adjustment of the carburetors, with the result you are supplying unequal mixtures to the various cylinders. I would suggest that you go over these adjustments very carefully, starting with both throttles in the



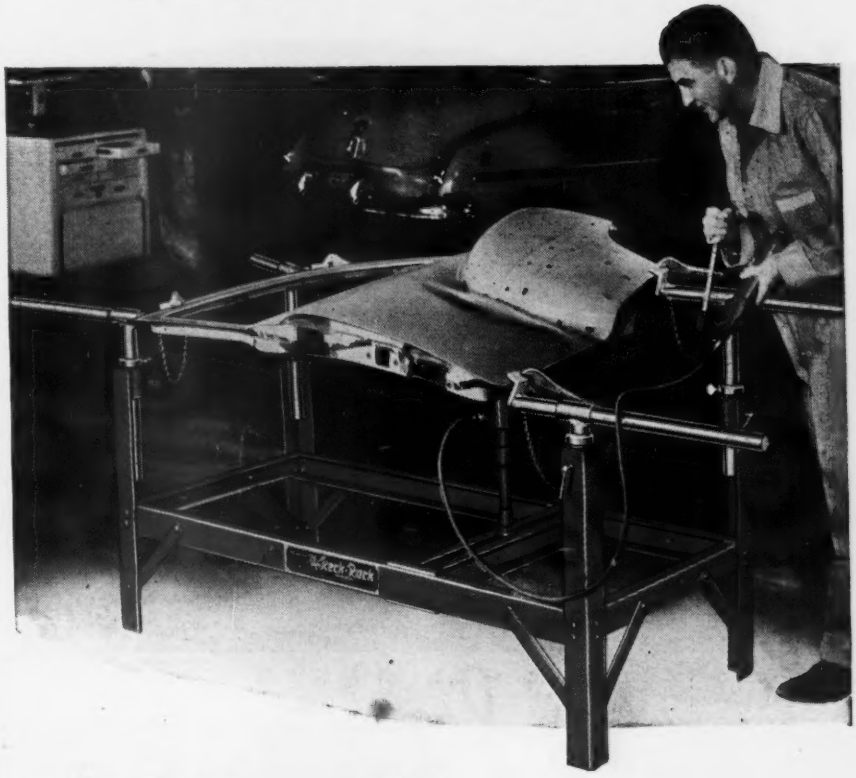
closed position and adjusting your linkage accordingly, making sure that they both open at the same instant. In cases of poor idling, it has been found that adjustment has proved to be the trouble. Make a very careful adjustment of the idle needle screws. This is important. Turn the screws until one seats, then back each of the

(*Continued on page* 88)

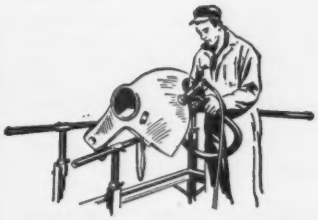
YOU'LL BE REBUILDING MORE BODY SECTIONS!

Get Set with a

Reck-Rack



Slash Time 50% *on metal rough-out jobs*



HANDLE ANY SHAPE

32 various flexible points of adjustment adapt Reck-Rack to *rigidly* hold any body section in the most convenient position or height. Make any set-up in 90 seconds. Order from your jobber.

There's no margin for "wrestling time" in car reconditioning! Yet, watch how a body man must struggle to hold an off-the-car fender or body section while he hammers, sands, files or does other necessary work.

End all this waste of time by getting a Reck-Rack. It's a regular octupus — with gripping fingers of steel. It costs so little — yet for many, it actually steps up output equal to the work of *an extra man!*

NOW — EVEN MORE PROFIT! You can get a sliding bridge (No. Z-777) for your Reck-Rack. Bantam "Porto-Power" threads into it to spot hydraulic power right where you want it, to push or pull.

BLACKHAWK

A product of BLACKHAWK MFG. CO., Dept. R-661, Milwaukee 1, Wis.

Clearing House . . . . Continued from Page 87

screws out exactly the same amount until a satisfactory idle is obtained.

The Problem:

I have a 1939 Plymouth which misses occasionally at low and high speeds. It sounds like spark plug trouble.

What We Did: We removed the carburetor and disassembled it. We found the high speed jet was for a different model of Plymouth. It was two sizes too lean for this model. We checked the float level in the carburetor and found it O.K. We checked the carburetor in a fuel analyzer and found it excessively lean and even after installing a proper jet it still tested lean. Checked the compression and found it to be to specifications. Tested the condenser, coil and distributor. All were O.K. Installed new spark plugs and set them at .025 inch. New breaker points were installed and set at .020 inch. Cam angle at 36 degrees. There is no loss in compression and no blow by. One thing we did find was when we removed a spark plug and put the compression gage in and running it a little faster than 500 rpms. the pressure dropped between 60 and 70 pounds. This is too high for good valve springs, I am told, a reading of 45 to 50 pounds being the average. A new carburetor was installed but the engine still persists in losing a beat occasionally. A new fuel pump was also installed. **Submitted by:** C. V. Hall, 324 Ferndale, So. Daytona, Fla.

We Suggest . . .

There are two possible reasons for this trouble. First of all, your hunch in reference to the valve springs is good. In this connection the valve spring pressure should be 77 to 83 pounds when the springs are compressed to length of 1 7/16 inch and 34 to 38 pounds when compressed to 1¼ inch. If you don't have a spring tester, you undoubtedly could have the springs tested at a local jobber. Another point to check would be the intake manifold for leaks and also around the intake valve guides. The reason I think there is a possibility of a leak is that in spite of your careful check in the carburetor, you still get a lean mixture and a crack in a manifold would cause such a condition. While you have made no mention of it I assume that you have carefully checked all the wiring and particularly the battery and the battery ground connections. If not I would do so. Another important point to check would be for sticking valves. The fact that your compression drops too much as you speed up the engine might be caused by either weak valve springs or sticking valves. Try

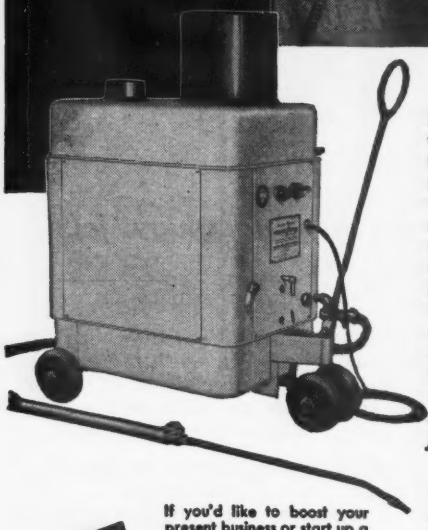
(*Continued on page* 90)

You can . . .

Boost Your Business or Start a New One With



SERVICE MASTER HYPRESSURE Jenny Combination STEAM CLEANER and COOLING SYSTEM FLUSHER



Here, in one compact, portable unit, are two profit-partners ready to go to work for you the minute you put it on your floor. It cleans motors . . . chassis . . . white sidewall tires . . . prepares for undercoating . . . thaws frozen radiators, and does scores of other jobs that will bring you $12 or more *extra profit* an hour. It back-flushes radiators and motor blocks in one operation by a combination of heat, chemical action, sudden but safe temperature changes and strong blast to provide the best cooling system cleaning job known to science. *You can do $300 to $500 extra business a month from cooling system cleaning alone!*

In the shop, Service Master Hypressure Jenny Combination will save up to 40% of your mechanics' time by cleaning dirty equipment *before* repairs. It cleans tools, pits, lifts, floors, driveways, etc. *10 times faster than you can clean them by hand.*



If you'd like to boost your present business or start up a new one, write for the FREE BOOKLET, "1001 WAYS TO EXTRA PROFITS." No obligation.

There is a Hypressure Jenny for every Mill, Mine, Factory, Farm and Automotive need.

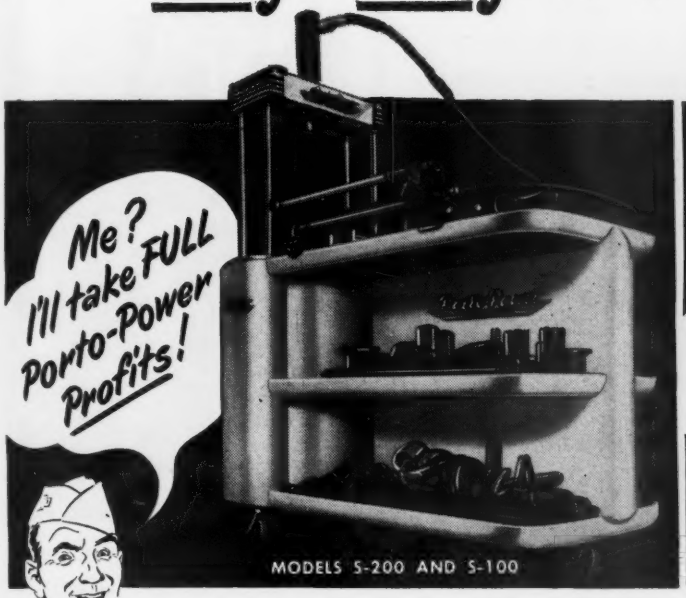
HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING COMPANY

P.O. Box 95 "Serving Since 1892" Coraopolis, Pa.

Because it's the ONLY COMPLETE body jack line . . . you get

Porto-Power®

any way YOU want it!



Okay! Then you'll want this S-200 *super deluxe* ass't. It pays out fast in both small and big shops — on body jobs, auxiliary frame and axle service and repair work. 10, 7 and 4-ton hydraulic rams. (For smaller ass't but same famous stand and press — see the S-100).



This S-45 ass't brings money-making magic to major reconditioning, rebuilding and repair work. It totes a select set of attachments and the universal 10-ton hydraulic unit. For even less cost—see the S-32 (fewer attachments, but same practical Angl-stand).



Cost-conscious shops equip each body man with a speedy 2-ton Bantam "Porto-Power". It handles 90% of all panel work. *Important — also get facts on new PULL-RAM Kit!*



Here's 20 TONS of hydraulic power — with brute-strength attachments — for profitably rebuilding the giants of the highway. A real time-saver for heavy-duty service! Model S-79.



Look! You can get the 10-ton "Porto-Power" and its *most vital* attachments in a simple kit . . . for basic body jobs, tow truck service and implement work. Models S-31 or S-59.

If it doesn't offer you all this . . . it's not a "Porto-Power"

☐ A full range of essential rams! ☐ Ability to PULL with FULL POWER! ☐ Easier handling . . . a single hose . . . *revolving* coupler . . . all-directional rams! ☐ Interchangeability of rams! ☐ Spreaders with built-in hydraulic rams! ☐ A complete line of body attachments! ☐ Specialized attachments for repair service!

BLACKHAWK®

Leading jobbers have full facts on the many "Porto-Power" ass'ts, individual hydraulic units and attachments. Blackhawk Mfg. Co., Dept. J-661, Milwaukee 1, Wisconsin.

FIRST CHOICE in over 90% of all body shops

PORTO POWER IS PROFIT POWER

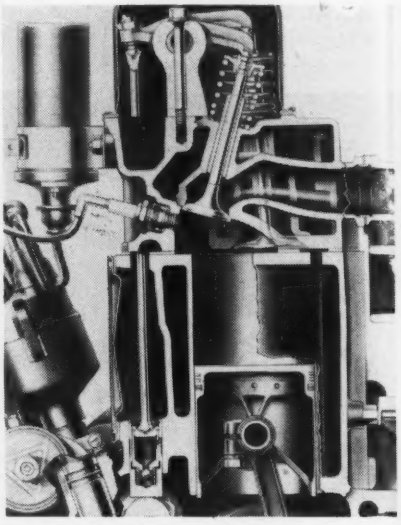
running some tune-up oil through the carburetor to see if this does not help to clear up the condition. If you find that there is some improvement, it might be advisable to counterbore the intake valve guides in order to reduce the tendency to stick. On counterboring the valve guides they should be bored approximately 1/16 inch larger in diameter than the valve stem and should be bored to a depth of approximately ⅜ inch.

The Problem:

How do you set the hydraulic tappets on Chevrolets and Buicks? **Submitted by:** R. L. Richards, Sac City, Iowa.

We Suggest . . .

Setting the hydraulic tappets on Buicks and Chevrolets is done differently than on other cars. Crank the engine until the piston is in firing position on the valve that is to be adjusted. Then turn the adjusting ball stud as required until all the play of the push rod, between the lifter and the ball stud, is removed. There should be no lash clearance in the valve



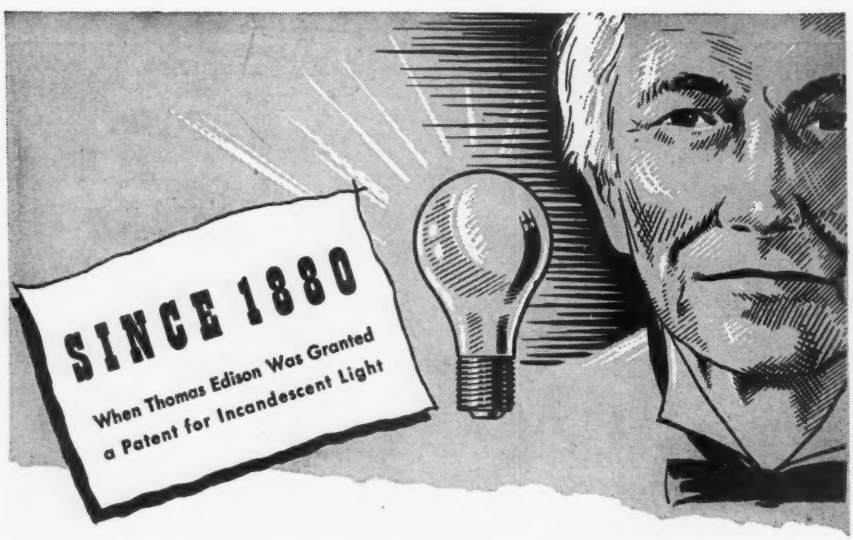
train. Then turn the ball stud down two more turns. Check to make sure that the oil groove on the ball stud is at least halfway down on the rocker arm so that it connects with the drilled oil passage in the rocker arm. Then tighten the lock nut. The Chevrolet tappets are adjusted in the same manner.

The Problem:

A 1948 Chevrolet is giving poor gas mileage after the engine was overhauled. There is also a distinct miss at high speeds.

What We Did: We checked the plugs, points, and condenser. Installed a new coil. We timed it with a timing light. Still no improvement. A new carburetor was then installed. The vacuum reading was 17 but every ten seconds the vacuum gage dropped. We tried shorting out the plugs when it was idling and the rpm decreased about 20 on each cylinder. **Submitted by:** Franklin Frykman, Souris, North Dakota.

(*Continued on page* 94)



TUTHILL

has specialized in the manufacture of top quality

SPRINGS

There's more than steel and 70 years of EXPERIENCE in Tuthill Springs. There's more than QUALITY . . . the finest alloy steel obtainable, heat treated for greater strength and longer life. There's also PROFIT in fast turnover for a product that is constantly in demand because it's dependable and priced right. And now there's even more . . . MOLYBDENUM DISULPHIDE (MoS_2), the newest Tuthill extra that keeps springs from *squeaking* and *galling*. What's more, Tuthill Springs are "Moly Disul" treated at no extra cost!



Ask your Jobber for a FREE copy of our latest Car Application Wall Chart.

TUTHILL SPRING CO.
760 W. POLK ST. CHICAGO 7

SELF-CONTROL STARTS HERE



AND TO RESTORE
ENGINE PERFORMANCE

OIL-CONTROL STARTS HERE



To stop oil-pumping, replace worn engine bearings

A rubber band and a wad of paper can start real trouble—and so can worn engine bearings! Worn main, connecting rod and camshaft bearings mean poor engine performance. *Performance goes up in smoke!*

When oil-pumping *starts* at the engine bearings, correction must start there, too. Give new piston rings a chance to do their own job—replace worn main, connecting rod and camshaft bearings on every overhaul. Genuine Federal-Mogul Bearings are *engineered* for the job of oil-control!

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

control oil-pumping where it starts—REPLACE WITH

FEDERAL-MOGUL

OIL CONTROL

BEARINGS

AUTO-LITE is a

Auto-Lite wire and cable is beautifully packaged... sells on sight...meets every car need. It's original equipment, too.



BACKED BY THE BEST ADVERTISED NAM

a complete wire and cable line

PLUS

AUTO-LITE "Steelductor" SPARK PLUG WIRE

This outstanding Silver Sheathed Auto-Lite Steelductor high tension ignition cable employs a seven-strand conductor of stainless steel instead of the conventional nineteen strands of copper wire. Gives remarkable improvements in performance when employed in shielded circuits.



PLUS

AUTO-LITE "Flextrand" PRIMARY WIRE

Highly resistant to attacks of heat and oil, Auto-Lite Silver Sheathed Flextrand primary wire permits easier stripping and soldering . . . gives long life . . . and is easy to install.



PLUS

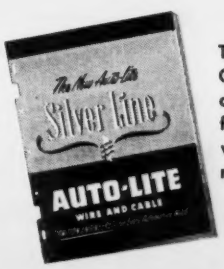
AUTO-LITE "Power Line" BATTERY CABLE

Auto-Lite Battery Cable, complete with the new Power Line Terminal that resists corrosion . . . assures excellent contact . . . complete customer satisfaction.



It will pay you to switch to the Auto-Lite Wire and Cable Line . . . the complete line—Steelductor Spark Plug Wire, Flextrand Primary Wire and Auto-Lite Power Line Battery Cable with the new Power Line Terminal that holds tight. Sign up today with Auto-Lite for the best dollar-making merchandising combination in the industry, write to

THE ELECTRIC AUTO-LITE COMPANY
Merchandising Division
Toledo 1, Ohio — Toronto, Ontario



The Auto-Lite Wire and Cable Catalog, giving complete specifications for every automotive vehicle, is available on request.

THE AUTOMOTIVE AFTER MARKET

Clearing House . . . .

Continued from Page 90

We Suggest . . .

Usually after an engine is rebuilt they do use a little more fuel and top speed will be limited due to the added friction of the new rings and bearings. I would suggest putting some break-in oil in the crankcase.

As to the slight miss, it could be the result of a weak valve spring or worn bushings in the distributor, causing an erratic spark.

The Problem:

We recently worked on a six cylinder 1950 Ford, one-half ton truck with 3000 miles on it. It has sticky valves, which we have been unble to correct.

What We Did: All new valves and guides were replaced. About 200 miles later the same trouble developed. Once again the engine was torn apart and then twelve new valves and guides were put in. This time the guides were drilled .002 inch. One or two valves still stick. **Submitted by:** William Gander Eliot Servicenter, 69th & Eliot Ave., Middle Village, Long Island.

We Suggest . . .

Chamfer the valve guides about 1/16 of an inch this can be done by using a drill of larger dimensions than the valve stem.

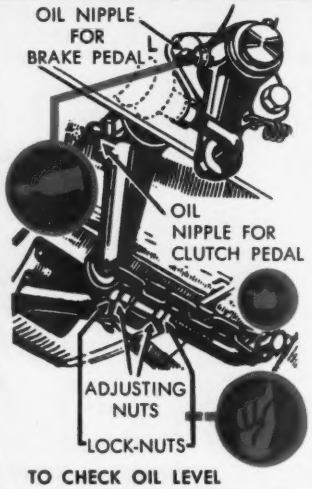


Change your brand of oil and make sure the crankcase breather is operating properly and the carburetor air cleaner has been serviced properly. You might try using a top cylinder oil. These units have been very successful in keeping the valves free. Also clean and flush the cooling system and tighten the cylinder head cap screws with a torque wrench.

know your way around the

HILLMAN Minx

A Product of the Rootes Group



CLUTCH

WITHDRAW MECHANISM — TO LUBRICATE

Apply a few drops of oil to each of the pivot points shown. Lubricate the two nipples of the clutch and brake pedals with oil guns.

CLUTCH PEDAL FREE MOVEMENT— TO CHECK AND ADJUST

Adjustment, when necessary, is by manipulation of the two nuts. Note the angle of the clutch chain hook in relation to the withdraw lever before the nuts are readjusted, so that the original setting position may be preserved. The correct clearance at the pedal pad is ⅝ in. (16 mm.)

REAR AXLE

TO CHECK OIL LEVEL

The correct level is to the bottom of the combined filler and level plug orifice.

TO DRAIN AND REFILL

Draining should be carried out when the car has just completed a run, when the oil is warm and will flow more readily.

CAPACITY

1¾ pints (2.1 American pints) (1 litre).

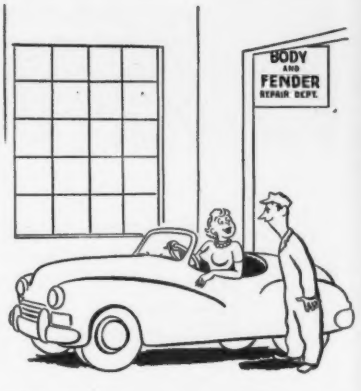
REAR ROAD SPRINGS — CLEAN AND LUBRICATE

The rear road springs should be wire brushed clean and painted with engine oil.

Alert service outfits are finding it increasingly important to know the facts about every detail of the Hillman Minx. To enable you to profit by servicing the Hillman owners who stop at your place, we offer FREE the complete Hillman chart of which the above is a small section. Send for your FREE copy of this chart today!

ROOTES MOTORS, INC.

27-11 Bridge Plaza North, Long Island City 1, N.Y.
403 North Foothill Road, Beverly Hills, Calif.
ROOTES MOTORS (Canada) Ltd., 170 Bay Street, Toronto, Ont., Canada



"I'd like you to see what's wrong with my upholstery!"



It's Like Money in the Bank for You!

As safe and as healthy a moneymaker as you're likely to meet in a lifetime of doing business—that's your U.S.I. franchise! Here's what it means...

- **Top Profits!** None higher! Standard-priced so you can't have a loss!
- **Top Performance!** Means customer satisfaction and repeat business!
- **Top Product Acceptance!** Super Pyro and U.S.I. Permanent are welcomed by motorists throughout the U.S.A.!
- **Top Reputation!** U.S.I. has been making fine anti-freezes ever since 1915!
- **Top National Advertising!** Puts Super Pyro and U.S.I. Permanent across ... through magazines, radio, posters!
- **Top Quality Products,** two of them...

U.S.I. PERMANENT — *the WEATHERPROOF anti-freeze!* Start selling it in early Fall! Can't boil away — one filling lasts all Winter! Can't cause rust! Nothing finer made!

SUPER PYRO — *the POPULAR-PRICED anti-freeze!* For years one of the fastest and biggest sellers! Super-safe — no rust — no odor! *The* standard of excellence in its class!





YOU CAN RELY ON U.S.I.!

U. S. INDUSTRIAL CHEMICALS, INC.

Pop O'Neill . . . . . Continued from Page 49

meantime, J. Manifold Gaskett's anger had risen to the boiling point, boiled over, simmered down, and along with the ice cream had melted into a semi-cool unpleasant mass. The only one happy at the whole situation by the time Tommy arrived, was little Jack who had finally prevailed upon his uncle to let him eat the ice cream cones, two at a time, since they were going to waste anyway.

Tommy was scarcely out of his tow car before J. Manifold was on his ear. But Tommy had had experience before with irate customers waiting beside the road.

"We'll get it fixed in a minute," he said calmly and walked over to the Chrysler. He flipped the key, pushed the button, and nothing happened. He flicked on the lights, took a look at them. They were very bright. He left the lights on and blew the horn. There was plenty of current. Still the engine wouldn't turn over. He hopped out, looked into the engine, noticed that the spark to the coil and distributor were both OK. Then he turned around to J. Manifold Gaskett.

"It looks to me as though you've probably got a bad starter switch. Or else your starting motor is on the bum. At any rate, I'll give you a push then we'll drive your car into the shop. We can work on it there."

J. Manifold Gaskett wriggled behind the wheel once more, wiping the remains of the orange pineapple from his pudgy, sticky fingers. With just a short push the Chrysler purred off and J. Manifold waved a diamond fingered hand out the driver's window.

It was fortunate that Tommy followed him for a few minutes, for he soon stalled.

Without thinking he pulled over to the side of the road, instead of letting the engine catch again. Tommy pulled up behind him. "I'll give you another push," he said.

But J. Manifold flipped the key once, pushed the starter button and the motor started evenly of its own accord. Instead of going on to Pop's Repair Shop, J. Manifold leaned out the window an called to Tommy "It's OK now," and drove off to his sister's.

First thing the next morning,

(*Continued on page* 98)





"Now he's opened a drive-in-theatre! . . ."



For Smoother Action—Longer Life

MoPar

CLUTCHES AND CLUTCH PARTS

Engineered especially for Plymouth, Dodge, De Soto and Chrysler Cars and Dodge "*Job-Rated*" Trucks.

Because MoPar clutches and clutch parts are made *especially for vehicles built by Chrysler Corporation*—the same as original equipment—they perform better and more dependably.

Drivers enjoy smooth, uniform, and efficient engagement with MoPar clutches. Tension-controlled pressure springs provide cushioned, full-facing contact for easy operation.

MoPar clutches last longer, too. Special ventilation minimizes frictional heat during engagement and disengagement. Lifetime lubricated release bearings assure less wear, longer life. Woven asbestos linings have large frictional area, are extra thick for longer service.

Use MoPar clutches and clutch parts—*genuine Chrysler Corporation parts*—in Plymouth, Dodge, De Soto and Chrysler cars and Dodge "*Job-Rated*" trucks.

FACTORY-ENGINEERED . . . FACTORY-INSPECTED . . . SUPPLIED BY CHRYSLER MOTORS PARTS CORPORATION

You can get MoPar parts from Plymouth, Dodge, De Soto and Chrysler dealers everywhere.

CHRYSLER MOTORS PARTS CORPORATION • DETROIT, MICHIGAN

Pop O'Neill . . . . . Continued from Page 96

however, when he got into his car, again it wouldn't start. Tommy and Larry Tait went after the car, brought it in.

Said Larry, "Better let me handle this one," And he drove it over by his work bench. He lifted the hood then jumped across the starter switch and the engine fired right off.

"Go down and get me a new switch," he said to Tommy. "And we'll get this one out even before this day begins."

When the new switch was installed, Larry found that the car started easily and perfectly and backed it out. However, when the self-styled great man came over to pick up his car about eleven thirty, the problem again reared its ugly head.

"All fixed," he called to Larry.

"All fixed," said Larry with a wave, and J. M. squeezed his bulk into his car. He pushed the starter button. Nothing happened. Just as dead as it could ever be.

"Hey, fellow," he called coldly to Larry, "Come over here a minute. Maybe I haven't learned to start this car yet. Show me how to do it."

"Simple," said Larry, "you have to be sure you turn the key far enough over. Then you'll get it all right. You're probably not turning the key far enough." He reached in, switched the key over, pushed the button. Nothing happened.

"Try turning it a little farther," said J. M. sarcastically. "Maybe you're no stronger than I am." Larry tried again. Still nothing happened.

"What'e a matter," said J. M. "Something wrong? Won't she start? Outa gas maybe? Aren't you a mechanic? I thought you fixed it."

Larry began to turn deep crimson but he said nothing.

"What *was* the matter with it?" J. M. kept on needling. "Did you have much trouble finding what *was* wrong? I'll bet you had to put a new part on, maybe two. What's the labor charge? How do you make a living around here any way? Fixing people's cars?"

"Look, Mister," said Larry finally, getting his dander up. "One more yip out of you and I won't fix your car."

"You won't what?" said J. Manifold, chuckling at his victim. "You mean you can't! All you young fellows want is to keep a traveler's car rolling and let the next shop worry about the job."

Fortunately for the peace of Glenside Pop O'Neill came ambling up at this moment.

"Now in the old days," J. Manifold had started on another lecture for Larry's benefit, "a mechanic had to do a day's work to get a day's pay. . ."

Pop sized up the situation at a glance. "He certainly did," Pop agreed. "I'll bet you remember those days as well as I do."

J. Manifold gave Pop an appraising glance. Pop's friendly grin was too much.

(*Continued on page* 102)



53% Extra Capacity
—at no extra cost!

BRIGGS
SHOCK ABSORBERS

Winter-ruined roads and streets mean more shock absorber sales—everywhere. And the shock to sell is Briggs. Briggs Shocks are built with 53% *extra* recoil capacity. They soak up road shock like an overstuffed cushion; they last longer, with less danger of blowouts and leaking. Ask your NAPA Jobber for the full facts on Briggs Shock Absorbers—53% oversize, with exclusive O-Ring Seal for uniform performance on *any* road, in *any* weather.

THE BRIGGS SHOCK ABSORBER COMPANY • CLEVELAND 3, OHIO
1523 East 45th Street • *Division of The Gabriel Company*

NAPA Assurance of Quality

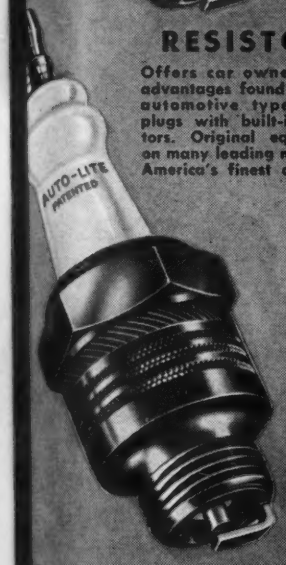
DEALERS KNOW...

Original Equipment is the Answer to Spark Plug Sales



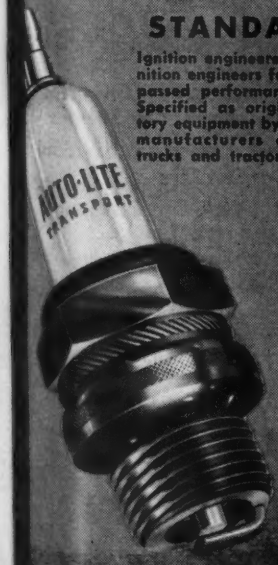
RESISTOR

Offers car owners new advantages found only in automotive type spark plugs with built-in resistors. Original equipment on many leading makes of America's finest cars.



STANDARD

Ignition engineered by ignition engineers for unsurpassed performance . . . . Specified as original factory equipment by leading manufacturers of cars, trucks and tractors.



TRANSPORT

Rugged construction and aircraft type insulator combine to give lowest cost per mile of spark plug operation . . . built to take it . . . another Auto-Lite original factory product.

AUTO-LITE SPARK PLUGS

ARE ORIGINAL EQUIPMENT ON MILLIONS OF CARS, TRUCKS AND TRACTORS IN USE TODAY. THIS TREMENDOUS READY-MADE MARKET IS YOURS WHEN YOU SELL AUTO-LITE. SEE YOUR JOBBER TODAY.

THE ELECTRIC AUTO-LITE COMPANY
Merchandising Division
Toledo 1, Ohio — Toronto, Ontario

... in "Suspense" ... CBS Radio Thursdays ... CBS Television Tuesdays



Barrett Meets All Needs

THE WORLD FAMOUS BRAKE DOKTER

Services Shoes ON The Car

...to a precision fit or for cam ground effect

RECOMMENDED FOR ALL REPAIR SERVICE SHOPS DOING ACTUAL BRAKE WORK ON THE CAR

ANALYZES AND CORRECTS SQUEALS — HARD PEDAL — SIDE PULL — AND OTHER BRAKE TROUBLES

The Brake Dokter measures drum diameter to the thousandth of an inch. It is a combination Shoe and Drum Gauge, centralizing tool and precision lining grinder.

It tailors lining to drum size, or undersize, for cam ground effect with Shoes mounted on the backing plate. It eliminates all accumulated errors — Produces the perfect brake job.



Approved, Used and Recommended By All Leading Car, Bus, Truck and Trailer Manufacturers

4 Models Available

B-105A For Universal Passenger Car Service

B-110A For Individual Car Dealers

B-115A For Passenger Cars and Trucks

B-120B For Trucks and Buses

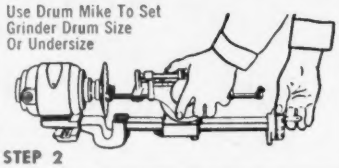
PRICED FROM $195.00

Ask Your Jobber ...Or Write Direct

GRINDING SHOES *On* THE CAR

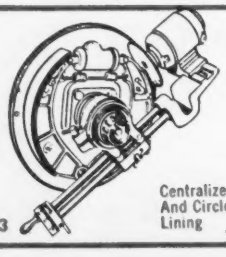


STEP 1 — Check Diameter Of Brake Drum



Use Drum Mike To Set Grinder Drum Size Or Undersize

STEP 2



STEP 3 — Centralize, Adjust And Circle Grind Lining



STEP 4 — Install Drum. No Further Adjustments Needed

BARRETT

The World's Finest Brake

For Brake Shoe Grinding !

PRECISION RADIUS SHOE GRINDER

Services Shoes OFF The Car

...to fit drum or for cam ground effect

RECOMMENDED FOR WHOLESALE SHOPS FURNISHING EXCHANGE BRAKE SHOES TO THE GARAGE TRADE

PRE-FITS RELINED SHOES TO THE EXACT DRUM SIZE OR GIVES CAM GROUND EFFECT IF DESIRED



The Radius Shoe Grinder is a precision machine which grinds brake shoes to the exact curvature of the drum. It may also be set to grind lining standard size, oversize or undersize for cam ground effect, with provisions for chamfering.

3 Models Available

B-350 Radius Shoe Grinder
B-75 True-Arc Grinder

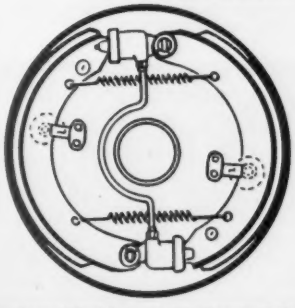
PRICED FROM

$148.50

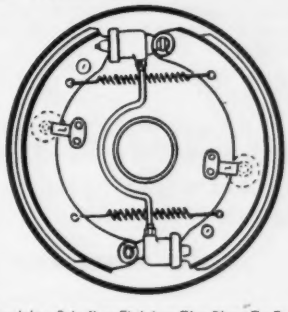
Model B-75-1 Grinder Attachment available for Barrett Reliners or any other Reliner having a rigid grinding table.

GRINDING SHOES OFF THE CAR

QUICKLY PRODUCES EITHER CAM GROUND EFFECT OR PRECISION FIT AS YOU DESIRE



Cam Ground Effect Suggested By Chrysler Bulletins For Their Brakes Provides Center Shoe Contact



Precision Grinding Finishes The Shoe To Exact Curvature Of The Drum—Regardless Of Oversize

EQUIPMENT CO.

Service Equipment 21st and Cass, St. Louis 6, Mo.

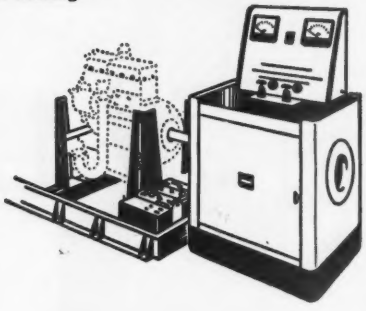
Boost Service Profits!
Slash Maintenance Costs!

Clayton KERRICK STEAM CLEANER

World's finest all-purpose steam cleaning machine, made in three sizes and in stationary, portable and trailer types; gas or oil fired. Models available with gasoline engine drive for use where electric power is not practical. Capacities range from 90 to 150 gallons of balanced cleaning solution per hour, at selective pressures up to 150 p.s.i. See your jobber for demonstration, or write for catalog.



Illustrated is the new Model HR Clayton Kerrick Kleaner, combining a 150 gal. per hr. steam cleaning machine and a 275 gal. per hr. hot or cold rinse unit. Available in stationary, portable and trailer types.



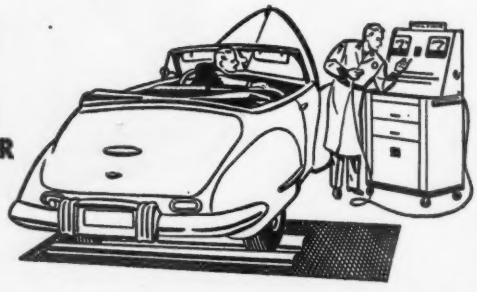
Models 17-500 CE (illustrated above) and 17-300 CE have direct reading horsepower and speed meters, requiring no computations or combinations of readings. Write for complete catalog on all models, with power curves.

Clayton ENGINE DYNAMOMETER

Invaluable to engine rebuilders, the Clayton Turbo-closed System Absorption Dynamometer provides for the run-in and adjustment of new or rebuilt engines under actual road conditions before being mounted in the vehicle. Torque load can be maintained indefinitely, or changed instantly. Available in several models to meet specific horsepower range requirements.

Clayton CHASSIS DYNAMOMETER

Enables the entire mechanism to be quickly and accurately checked while operating under actual road driving conditions without leaving the service stall. Eliminates guesswork in trouble shooting: replaces hazardous and costly road tests; proves workmanship; assures peak performance adjustments and insures customer satisfaction. Four model combinations. Send for catalog.



With the rear wheels on the rolls, the car engine is started. By portable hand control, the operator creates every possible road condition and observes the performance. In less than 15 minutes, 35 vital performance checks are accomplished.

Clayton MANUFACTURING COMPANY
EL MONTE, CALIF.

Chicago Trading Area:
638 North Albany Avenue,
Chicago. KEdzie 3-1383

Northern Ohio:
11304 Superior Avenue,
Cleveland GA 1-1280

Detroit Trading Area:
6432 Coss Avenue,
Detroit 2 TRinity 56300

Cincinnati Trading Area:
1774 Mentor Av. (Norwood)
Cincinnati 12, REdwood 9173

New York-Philadelphia:
Burrshell Company,
3701 Tonnele Ave., N. Bergen, N. J. UNion 7-2674

Atlanta Trading Area:
Unit 6, Bldg. A
710 Murphy Avenue,
Atlanta, Ga. RAymond 0766

Pop O'Neill

Continued from Page 98

"I sure do," said J. Manifold. "I can remember back in 1908 when I started selling. I had one of the first cars on our sales force."

"Those were the days when a fellow really had to be a salesman to make a living," Pop encouraged him.

"You bet," said Gaskett, "We really had to work for our money then." He shook his head to clear the memories away. "Selling certainly has changed in the last forty years."

"And," Pop broke in once more, "it's taken a smart man to stay in line with the changing techniques."

"Yes," admitted Gaskett, looking modestly at his shiny fingernails,



"Alright dammit—if you insist on taking the car just the way it is, bring along a shovel!"

"hard as those old timers worked at it, their methods couldn't do much in today's markets."

"It's about the same in my business," said Pop. "Times have changed and the cars and the service industry itself have changed with them. Mechanics today would have a hard time working with the crow bar and sledge hammer which we started with in our tool kit.

"But those old mechanics wouldn't know which end of an automobile went down the street first today. It taks a modern mechanic to work on a modern car. And," he put in quickly as he saw J. Manifold Gaskett glaring at Larry, "the cars too have become so complicated that you can't always find the trouble first

(*Continued on page* 104)

SIGNED, SEALED and DELIVERED

o your customers FACTORY FRESH



Factory Fresh WHEN YOU BUY 'EM!

Factory Fresh WHEN YOU SELL 'EM!

The automotive industry knows Durkee-Atwood's reputation for outstanding quality—gained during its 41 years in the field. That quality is now protected by the sensational new plastic-sealed package that brings you Durkee-Atwood V-Belts—GUARANTEED NEW and *Factory Fresh*.

This exclusive (copyrighted, patent applied for) package shuts out sunlight, dust, dirt, moisture, oil and grease, and retards oxidation. This package inspires immediate customer confidence and *preference*—it has already proven itself to have the greatest sales appeal in the history of V-belt merchandising!

3 Reasons Why You'll do Better with DURKEE-ATWOOD V-Belts

1. Unmatched Display Value . . . the brilliantly colored, gleaming row of *Factory Fresh* V-Belt packages tell the world you have the *cleanest, freshest* stock in town! Here's a V-belt that has *showmanship*—your customers buy it with confidence.

2. Interchangeability Listings on Package . . . complete replacement information is printed right on every package. For your convenience you'll find a cross-reference listing of all popular belts of its type, inside and outside circumferences and top width, and car applications by make, model and year, as well as car manufacturers' own belt numbers!

3. Unusual Profit Advantages . . . you buy for less and sell for more with Durkee-Atwood *Factory Fresh* V-Belts. The Durkee-Atwood program provides greater profits for you—the best reason in the world for putting real emphasis on V-belt sales!

Copyright 1951 Durkee-Atwood Co.

DURKEE-ATWOOD COMPANY

MINNEAPOLIS 13, MINNESOTA

MANUFACTURERS OF V-BELTS, RUBBER AND CHEMICAL PRODUCTS SINCE 1910

DURKEE-ATWOOD COMPANY
Dept. MA6, 215 N. E. 7th St., Minneapolis 13, Minn.

Gentlemen: Without obligation, I'd like more information about Durkee-Atwood *Factory Fresh* V-Belts and the name and address of your nearest jobber.

Name_____ Firm_____

Address_____ City_____ State_____

Pop O'Neill . . . . . Continued from Page 102

go off. It takes a bit of thinking and a bit of reasoning out. When you find a difficult problem solved on the first shot you have to thank your lucky stars. Usually even the best diagnostician has a little trouble when he boils down the possible causes to one or two. But, like a good physician, a mechanic has to keep working until he finds the real cause of the trouble. Take this job for example. Larry Tait here has been a mechanic for twenty years. Mighty good man. He came in this morning and told me he had the trouble fixed up. Well, he's missed here somewhere along the line. But he'll get it pretty fast. Seemed to me he was right when he said the trouble was the starting switch. But. . ." Pop shrugged, "let's take a look at a wiring diagram, Larry." Then he turned back to J. Manifold.

"You see now we know it isn't a switch. It may be a burnt commutator maybe not. I haven't seen an Imperial in some time. It seems to me they had another thing which might cause the same trouble."

He ambled back into his office, Larry following him, and took down the Manual. For a minute he traced the circuits, and suddenly his stubby fingers slapped down on the page.

"See that wire, Larry. The one that runs from the starter solenoid to the generator."

Larry looked for a minute then nodded.

"I'll bet that's your trouble. It's the ground wire for the solenoid. Grounds through the generator. If that generator commutator is burned or even dirty on one bar, it could break the ground and your solenoid couldn't operate. But if it happened to stop with a bar which could make contact the starter would work okay."

Larry thought a minute then nodded. "That's the way this one acts all right. I'll take off the cover of the generator and have a look at it." He walked back to the car and went to work. The commutator was badly worn and dirty. Larry got his tool kit and removed the generator, then tested it. Sure enough the commutator was shorted.

Pop signaled J. Manifold Gaskett to come over. "There's the baby," he said. "Now would you ever think that a bad bar in a commutator would effect your starting switch?"

"The thought never occurred to me," J. Manifold admitted.

"You see, normally, the cause of that trouble would be a starter switch, just as Larry diagnosed. Next, probably the trouble would be in the starting motor. It just happened that this time the cause was more obscure. In an hour and half we can have that generator rebuilt as good as new. We guarantee that it won't give you any more trouble."

"And the bill, I suppose," put in J. Manifold Gaskett sarcastically, "will represent these years of wisdom on your mechanic's part, plus a rebuilt generator, plus a road trip, plus two pushes, plus a starter switch." (*Continued on page* 106)



SELF-ALIGNING
HUB SPLINES

Pointed splines on the hub of the Accurate Powerflex clutch plate automatically line up the splines of the transmission shaft, making it easy for the mechanic to insert the shaft through the plate hub. Save valuable time. Prevent burred splines, bent plates. It's another Accurate exclusive! Powerflex plates are engineered specifically to meet the special needs of the repair shop. That's why they're easier to install and why they deliver more miles of trouble-free clutch service.

Exclusive Features of the
POWERFLEX CLUTCH PLATE

- ***Self-Aligning Hub Splines***
- ***Flat-Top Cushion***
- ***Spring Supports***
- ***Safety Stops***

WRITE FOR DETAILS

GET IT FROM YOUR JOBBER

There's a New Powerflex Clutch Plate in Every ReNu-Accurate Clutch Set



CLUTCH Accurate SERVICE

Accurate Parts Mfg. Co.
12435 EUCLID AVENUE • CLEVELAND 6, OHIO

SELL THE BEST SELLER!

SELL

DELCO



THE NATION'S No. 1 BATTERY

No Other Battery Built Today Has These Selling Features:

1ST WITH AUTOMOTIVE ENGINEERS

1ST IN NEW CARS

1ST IN NEW TRUCKS ...

1ST IN POPULAR FAVOR..

Delco is first in favor with the millions of folks who drive . . . first in their minds when they think of batteries. Delco is the original-equipment leader, the replacement-sales leader. It's backed by continuous advertising and promotion. Sell Delco, the nation's No. 1 battery, first in demand and first in sales.

DELCO BATTERIES

DELCO BATTERIES — A UNITED MOTORS LINE

Available Everywhere Through UNITED SERVICE MOTORS *United Motors Distributors*

Pop O'Neill . . . . . Continued from Page 104

"Yes," said Pop putting on his own best smile. "I suppose it will. If we didn't have these years of Larry's experience, we couldn't be fixing your car in the first place. So you really get charged for that, we call it flat rate time. Rebuilding the generator we'll charge you for, because we're rebuilding the generator. The road trip we'll charge you for, because I have my overhead and my mechanic's pay and we did get you car started again. Right?"

"Yes," J. Manifold admitted, "I did get back to my sister's. But how about that starter switch?"

"Well," said Pop, "I guess maybe we could write the starter switch off this time. We can sorta donate that to you with the compliments of Pop O'Neill's Repair Shop. You see now we are really into the realm of big business and high finance. That starter switch is worth sixty cents."

J. Manifold's moon-like face broke into a sunny smile, "I guess you can add that too. The whole thing reminds me of the story about the little boy standing on the corner with a bedraggled looking mongrel pup and a "For Sale" sign on a stick above it. A man asked him, 'How much do you want for that puppy?'

" 'Eighty thousand dollars,' said the boy.

"The next morning he still hadn't sold his puppy. 'How much do you want now?' The man asked him.

" 'Eighty thousand dollars,' he reiterated 'My price is firm.'

" 'Say sonny you'd better drop the price a bit on that puppy.' The man advised him. 'If you really want to make a sale.'

" 'Nope,' said the youngster. 'He's worth every cent of eighty thousand.'

"The next day the boy was there but the sign was gone. 'Say, boy,' the man asked, 'did you finally get your price for that mongrel puppy?'

" 'Yep,' he said. 'I made a good sale. Got my eighty thousand all right. I traded him for two forty thousand dollar kittens.' "

Little Jackson had been a quiet watcher of the whole show. Now he could suppress his eagerness no longer. The talk of big money had inflamed his imagination.

"Say, Uncle Jackson," he asked, tugging the big man's sleeve, "are you going to pay him with a twenty dollar bill, too?"

He glanced at Pop and Larry, but the allusion meant nothing to them. J. Manifold put on his most courtly manner, "Why, certainly," he said with a flourish, and reached for his wallet. "That's all I have." Then he winked at Pop and he handed him the bill.

"I hope you can change this."

Without cracking a smile Pop looked gravely down at the little boy and said, "Well, we'll have to take a special trip to the bank but I think we'll be able to make out."

Then to the little boy's complete astonishment both men suddenly smiled.

Here is what happens when you use anything but the Best in Brake Fluid...



UNRETOUCHED PHOTOGRAPH

It's bound to happen when inferior brake fluid is used—swollen rubber and corroded metal that leads to brake failure in emergencies. • So . . . *Never* use anything but the *best* in brake fluid. Use genuine Thermoid Hydraulic Brake Fluid. Meets or exceeds S.A.E. specifications.

Thermoid

the standard of quality and precision processing in brake lining; brake blocks; hydraulic fluid, cylinder assemblies; hydraulic brake parts.



Thermoid Company • Trenton, New Jersey

"It's true ECONOMY for the new mechanic to buy Snap-on* QUALITY"

Snap-on* SERVICE
is provided, coast-to-coast by men like these...

800 Strong
They "bring the tool store to your door."





Mr. John Leeds, service manager of Irvington Motors, Inc., Irvington and Newark, N. J., points out the reasons to Otto H. Ploetner, Jr.

● Mr. Otto F. Ploetner, head of Irvington Motors, believes in "starting 'em young...and starting 'em *right.*" So the first step in the shop training of 17-year-old Otto, Jr., was the selection, under the guidance of Service Manager Leeds, of a complete set of Snap-on Tools. Mr. Leeds has used Snap-on Tools for 25 years, and every man in the shop uses them. They *know* Snap-ons help a man develop his skill and earning power. They've proved the economy of Snap-on Quality. They like Snap-on Service—choosing and testing the tools right at their own bench, with no mistakes, no time wasted. Yes, for the mechanic as well as the shop, as Mr. Leeds points out, "it's true economy to buy Snap-on Quality." Write for your copy of the 104-page Snap-on Catalog of more than 4,000 tools... *America's finest!*

*Snap-on is the trademark of Snap-on Tools Corporation



SNAP-ON TOOLS CORPORATION
8036-F 28th Avenue
Kenosha, Wisconsin

Thousands of dealers have seen how

WALKER REMOVES



A Typical Clinic Where Service Men See How Walker Oil Filters Remove Water From Oil Before Their Own Eyes

Walker backs up its claims with actual proof!

In hundreds of dealer clinics from coast to coast, thousands of service men have actually seen this amazing demonstration with their own eyes.

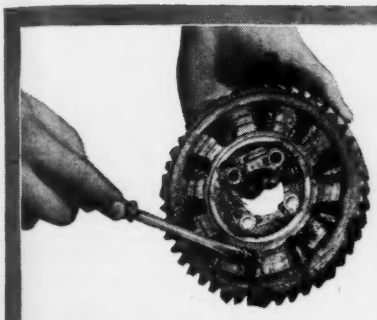
The Walker Oil Filter demonstrator, shown above, simulates an actual oil filter installation. First, clean oil is circulated under normal temperature and pressure through the system. Next, water and synthetic sludge are added—creating a dirty oil emulsion. Then, as the audience watches, the Walker Oil Filter with its exclusive *Laminar* material *clears the oil of both water* and dirt—returning the oil to its original condition!

Here is a factual demonstration—not a mere claim—that the Walker Oil Filter *does more than filter dust, dirt and abrasives.* It recognizes and acts against the cause of harmful sludge and acid corrosion—water in the oil . . . the most dangerous of all oil contaminants!

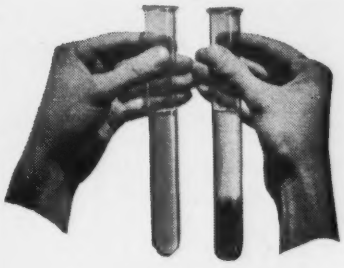
GET IT FROM YOUR JOBBER

WATER FROM OIL!

Exclusive Laminar Material Provides Extra Protection Against "Crankcase Moisture" . . . Minimizes Corrosive Acid Wear and Sludge Formations



WATER CAUSES SLUDGE—the major cause of operating difficulties. Water in the presence of soot, lead compounds, road dirt and other solids in the oil creates a pasty mayonnaise-like condition which is the starting point of sludge.



WATER DESTROYS DETERGENCY—the newest advancement in lubrication. According to well-known authorities, water contamination in the oil can destroy certain of the dispersant or detergent actions of modern heavy-duty oils.



WATER STARTS ACIDS—the major cause of engine wear. Highly acidic "blow-by" fumes condense in the presence of water, form dangerous corrosive acids which are carried in the water contamination of the oil stream to all parts of the engine.

The basic filtering material used in the Walker Oil Filter Cartridge is pure wood cellulose fibre. In addition to removing dirt, dust, metal particles and other abrasives through its normal "3-way filtration," these fibres have two additional characteristics which provide *extra protection* against "crankcase moisture." (1) They will selectively remove water from oil. (2) They have the capacity of holding 16 times their own weight of water. (The average car size can absorb a full quart.)

Because of this water absorption, the Walker Oil Filter renders an *extra service* in the control of "crankcase moisture"—the most dangerous contaminant of oil.

It reduces "acid corrosion" to a minimum by absorbing the acids contained in the water it removes from the oil. It actually functions to prevent the formation of sludge by keeping the moisture content of the oil below the "sludge danger zone"—and it helps to preserve the detergency of heavy-duty oils.

Here is an oil filter that does more than just filter. It recognizes the "triple-threat" of "blow-by" contamination. It attacks the cause of acid corrosion and sludge formation —water in the oil. Certainly change oil periodically—but equally important, keep oil clean between changes by giving your customers complete protection against *all* of the dangerous oil contaminants, including water!

WALKER
OIL FILTERS

WITH PATENTED *Laminar* CONSTRUCTION



Care Saves Tires . . . Continued from Page 55

to cup, wear unevenly and wear rapidly. Therefore, examine the tread carefully to see if it is worn off on one side, if it is cupped around the circumference, if it is worn severely with feather-edged wear marks on the tread design, or if the combination of these characteristics is evident. If this type of wear is apparent, check and adjust the front end alignment on a dependable alignment machine.

Wear. Worn front end and suspension parts will affect tire life to a marked degree. Worn king pins and bushings will also allow the wheel to tilt, causing wear on the inside of the shoe; worn tire rods will allow improper toe-in so as to cause undue wear on the tire and sagging; or broken springs will throw off alignment, again causing excessive wear of the tires. Also shock absorbers, if they are inoperative, will increase the strain on tires. This not only causes premature wear of the tread but also causes fabric breaks and cord separation. If a tire has a number of bruises on the side walls, there is a good chance that the shock absorbers are not operating. Always make shock absorber testing a part of the tire care program.



Get the BEST in Connecting Rod Service

Federal-Mogul reconditioned and rebabbitted connecting rods help mechanics to put top performance into reconditioned engines. Rebabbitted rods have pure, all-new babbitt, finished to precision sizes; reconditioned rods have truly round bores, ready to take new precision insert bearings. Federal-Mogul rods mean *better overhauls!*

FEDERAL-MOGUL SERVICE *(Division of Federal-Mogul Corporation)*

Ask Your **FEDERAL-MOGUL** *Jobber*



"I distinctly remember you saying that man does not live on bread alone!"

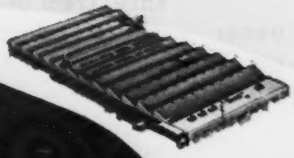
Non Mechanical Factors. By far the most important phase of tire care is driver education. Every repair shop owner should make it his responsibility to explain to his customer how the driver can increase the life of tires. The following points should be covered: Keep a constant check on tire pressures (remembering how temperatures affect pressure). Avoid high speed driving on rough roads. Start at reasonably slow speeds, to avoid spinning wheels. Whenever possible, slow down well in advance of a stop. Drive at moderate speeds. Avoid pulling up against curbstones. Avoid hitting ruts, rocks, and other ob-

(*Continued on page* 112)

Kelsey-Hayes

Know How

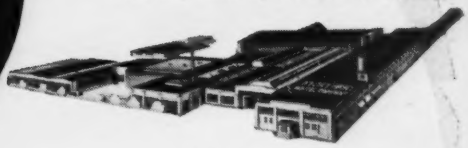
...in DEFENSE and PEACE-TIME production



Kelsey-Hayes
Los Angeles, Cal. Plant



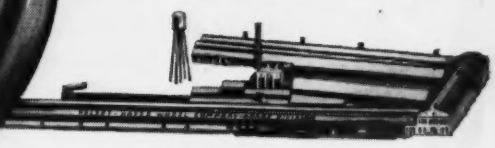
Kelsey-Hayes
Detroit, Mich., McGraw Plant



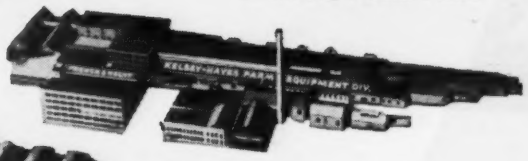
Kelsey-Hayes
Windsor, Ont., Canada Plant



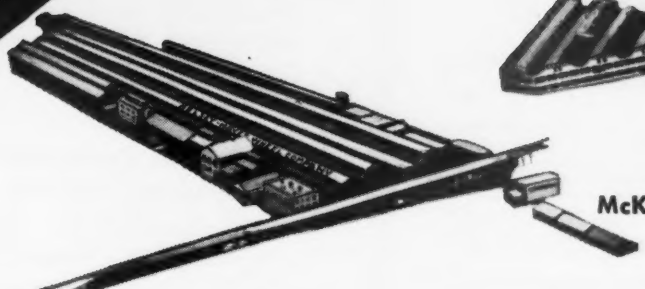
Kelsey-Hayes
Detroit Mich., Military Plant



Kelsey-Hayes
Jackson, Mich. Plant



Kelsey-Hayes
Davenport, Iowa Plant



Kelsey-Hayes
McKeesport, Penna. Plant

Know How

Kelsey Hayes

FOR MILITARY AND CIVILIAN USE:

Wheels, brakes, hubs and drums for cars, trucks, tractors . . . and cargo trailers, troop carriers, gun carriages, tanks, etc.

Electric brakes, brake power equipment, power chambers . . . and valves for all types of military and civilian vehicles.

Shells and shell casings, rockets, and aircraft engine parts, etc.

KELSEY-HAYES WHEEL COMPANY

MILITARY AVE., DETROIT 32, MICHIGAN

Care Saves Tires . . . Continued from Page 55

jects which may damage the casing. Have the car checked at regular intervals for mechanical failures which may decrease tire life.

Also explain to the car owner that under certain severe conditions, no matter how careful he may be of his tires, he must expect them to wear more rapidly than under more moderate conditions. A man who drives on winding, hilly or rough roads cannot expect to get the same performance from his tires as someone who travels on straight, smooth roads. A car owner must not blame mechanical failure for wear which is caused by road conditions or his own driving habits.



HANDY COUPON FOR ORDERING DURA-BOND CATALOG

Please send us your complete catalog today.

Name _____ Firm Name _____

Address _____ City _____ State _____

Dura-Bond Bearing Company, Box C, 715 Loma Verde Ave., Palo Alto, Calif.



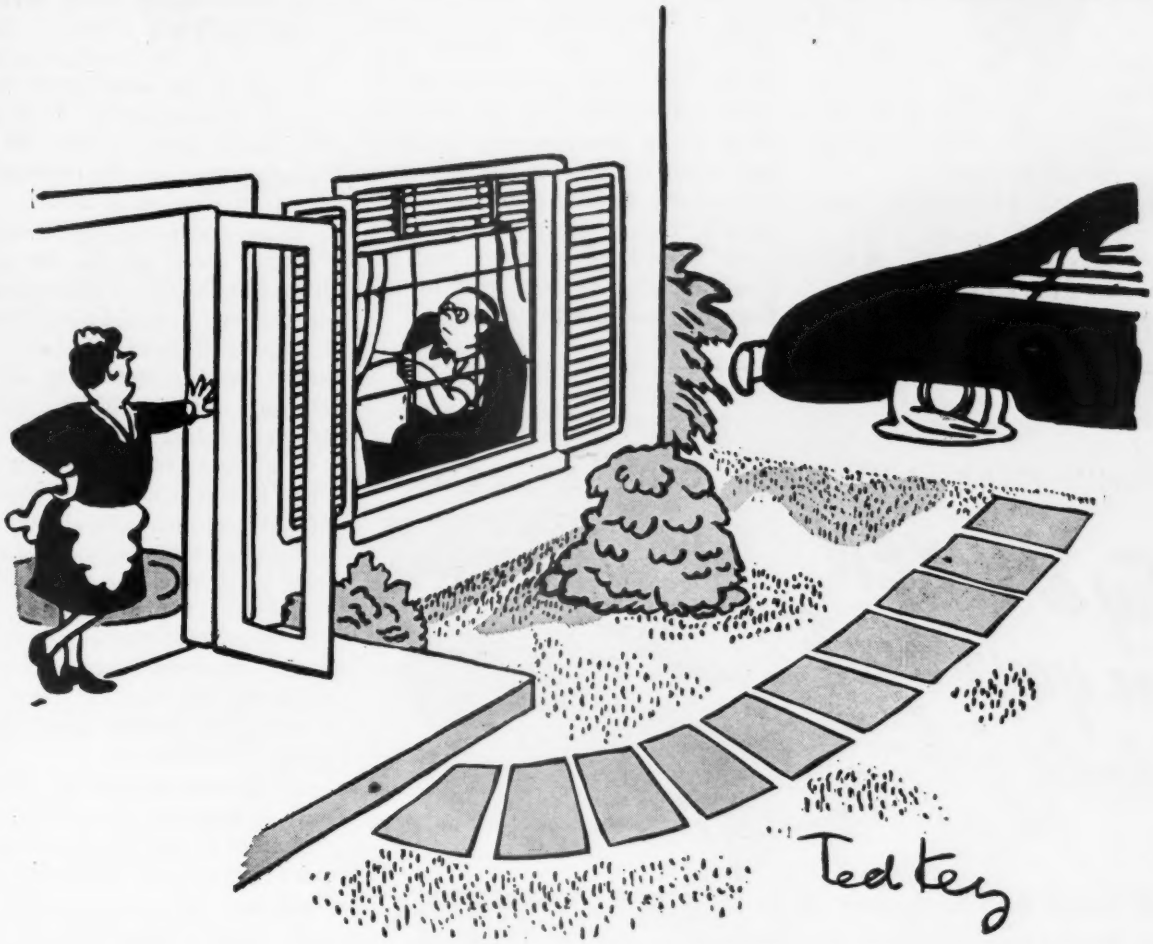
Fram's eye catching 8-color window display of the beautiful blonde and a string of pearls is getting considerable praise throughout the industry. Used both in magazine and point-of-sale display, it serves to promote the use of Fram oil-air-fuel filters "for complete engine protection."

Price Freeze and Taxes Cut GM Earnings

Effects of higher taxes and increased material and labor costs without a compensating increase in prices because of government regulations have reduced General Motors' earnings considerably during the first quarter of this year despite near record sales. GM earned $141 million on net sales of $1,960 million during the first quarter of this year, compared with earnings of $212 million on sales of $1,643 million in the same period a year ago. Earnings as percentage of sales dropped to 7.2 per cent compared with 11.1 per cent for all of 1950. It is interesting to note that GM set aside $264 million for estimated taxes, or an amount 87 per cent greater than its net earnings.

Two Factory Executives Head Up Government Agency

Two automobile executives have been named to important posts with the National Production Authority. Courtney Johnson, assistant to the president of Studebaker Corporation, is director of the Motor Vehicle Division, Industrial & Agricultural Equipment Bureau, of NPA. Robert Cass, on leave from his post of assistant to the president of White Motor Co., is serving as deputy director of the division.



A CARTOON FROM THE SATURDAY EVENING POST.

"That noise you thought was a firecracker . . ."

Looks like a tire sale coming up. And as Hazel would only work for a Post family, it's sure to be a nationally advertised, Post-advertised tire.

That's the way it is with all your really good customers. They buy the brands they know and trust. When you handle those Post-advertised lines, your station's reputation goes up, and your selling time goes down.

So stock Post-advertised lines. They *sell fastest* because the Post carries more automotive advertising to more people than any other magazine in the world. (Like auto cartoons? For free new collection, write Automotive Div., Dept. F, Saturday Evening Post, Phila. 5, Pa.)

The Saturday Evening POST -gets to the heart of America

Powerglide . . . . . Continued from Page 47

shaft insert pin into the switch mounting bracket and locating plate. Tighten the screws to secure the switch in this position and remove the locating pin.

If trouble still persists, use the following check to locate it.

If slippage is excessive in all ranges, check the oil suction pump for improper seating. If not seated properly, the pump will suck air which will result in the converter not receiving enough oil. Or the front pump pressure may be low, indicating a stuck regulator valve, or scarred, front pump gear. Or have excessive clearance or damaged gasket or warped mating faces allowing short circuit of oil from one passage to another.

Note: If the car won't move in any range after using reverse, it would indicate complete loss of pressure at the front pump and is caused by the rear pump leaking air in suction lines. This causes the front pump to lose its prime after a long run in reverse when the transmission is hot.

If excessive slippage is noted in "Drive" only, check the control linkage adjustment and adjust it if necessary. It could also be caused by a poor or damaged clutch piston seal, causing partially engaged clutch and result in worn or burned plates.

If slippage is excessive in "Low" only, it would indicate linkage out of adjustment, low band needs adjusting, modulator or accumulator valve stuck, or modulator control lever or piston stuck, resulting in no build-up of pressure in lines. Also you may find a poor or damaged low servo piston ring, resulting in partial band application.

If slippage is noted in "Reverse" only, it might be the result of control linkage out of adjustment or the reverse band adjustment. The front pump pressure could be low, indicating a leak in the circuit between the front pump and the reverse servo.

If the car creeps foward in neutral, it probably would be the result of improper linkage adjustment, a piston vent valve stick closed, on clutch plates improperly assembled or sticking. If the car creeps backwards with the control

(*Continued on page* 116)

"VIXEN" FILES ARE MADE ONLY BY HELLER

Try a "VIXEN" on your next body job—



and you'll find how easy it is to get that "like new" quality finish

When you give your workmen a "VIXEN" file, note how easily and quickly they acquire the knack of producing that "like new" quality finish.

You don't have to be an expert to cash in on superior "VIXEN" cutting power. The deep gullet and wide pitch of the precision milled curved-teeth provide a genuine shearing action without loading, scratching, wire edges, hollow centers or spots. Result — fine workmanship for your customer, more profit for you.

Ask your jobber for the new "VIXEN" babbitt cut file — now widely used in auto body and fender dent work.

HELLER BROTHERS COMPANY

America's Oldest File Manufacturer

NEWCOMERSTOWN, OHIO



Easy to identify "VIXEN" by the white envelope.

"VIXEN" comes factory-sealed in a white envelope. This is packaged in a white carton. It makes possible easy, quick identification and serves as your protection against imitations.



HANDY HOLDER easily curves "VIXEN" in or out to fit surface contour. Only a "VIXEN" can be resharpened again and again. This means "VIXEN" costs less in the long run.

VIXEN MADE ONLY BY HELLER

Trade Mark Reg. U.S. Pat. Off.

MILLED CURVED-TOOTH FILES



"You garagemen think all women are dumb, but I can show you a thing or two!"

Where Dependability Counts...

use PACKARD BATTERY CABLES

DEPENDABILITY is what is wanted in battery cables—the assurance that a touch of the starter means *quick, positive starting every time*—in any climate, and in any kind of weather.

That sort of dependability—day after day, year after year—has made Packard Battery Cables the standard of the industry . . . the *standard by which all other cables are judged.* And Packard Battery Cables are used as original equipment on more cars, trucks and buses than any other make.

Packard Battery Cables are full-size, full-weight . . . deliver a full measure of value. They offer a choice of LeadAlloy terminals or leaded brass terminals—and both deliver top performance.

So, where dependability counts, use Packard Battery Cables—use the cable with *proved performance, proved quality, proved superiority.*



Packard

REG. U. S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

PACKARD PETE SAYS—

You're never in doubt with Packard Automotive Cables—for, when you use Packard, you use the finest. Packard Low Tension Cable with amazing "249 compound" insulation—Packard High Tension Cable in spools or packaged in sets—Packard Battery Cables with Lead-Alloy terminals or leaded brass terminals. All are nationally known, widely distributed. Standardize with Packard.

Powerglide . . . . . Continued from Page 114

lever in low, it would also be the result of improper linkage adjustment.

If the car won't move and the rear wheels are locked, check for a locked emergency brake or a parking lock pawl may be engaged, or a broken part in the transmission.

If the car will not move in drive range and the engine runs away and the rear wheels are free and the transmission hot, look for over-expansion of clutch parts due to excessive heat caused by low radiator coolant level, bad oil cooler, or thermostatic valve or dragging low band.

If the car will not move at any range and the rear wheels are free, it would indicate a faulty front pump. The rear pump air leakage into the suction lines causes the front pump to lose its prime after long reverse with transmission hot. Check for rear pump gasket leaks or a front pump that has excessive clearance.

If the transmission shift from low to drive is normally rough with the car in motion, it could be caused by improper low band adjustment, clutch plate worn or binding in clutch flange, or on the clutch hub or transmission modulator control lever or piston stuck resulting in excessive pressure in the apply lines.

If the engine speeds up when shifting from low to drive with the car in motion, look for an improper band adjustment or worn clutch plates or binding clutch flange or clutch hub.

If a chatter is noted when starting in low range, check the low band adjustment or it might be the cause of improper disengagment of clutch, resulting from distorted plates, sticking clutch pistons, or stuck clutch piston vent valve. Also check the low band adjustment and the drum surfaces.

If a chatter is noticed when starting in low range, check the low band adjustment or it might be in the reverse band adjustment. Both of them should be adjusted.

If excessive chatter is noted when starting in reverse range make a reverse band adjustment and also check the reverse ring

(*Continued on page* 120)



"Ah, yes, the mail always goes through!"



Recommended by *Men Who Know!*

The men who know the importance of quality replacement parts use and recommend G-H Front End Suspension Parts, Tie Rod Ends and King Bolt Sets. Each G-H replacement part is scientifically engineered, precision built of the finest materials to give guaranteed performance. Increased sales, better profits, more satisfied customers are yours with the complete G-H "Safety Parts" line. Ask the G-H man or write us.



HERSHEY METAL PRODUCTS, INC.
Derby, Connecticut



FRAM'S 1st in filtration and sales!

YOU HAVE TO BE BEST TO BE FIRST . . . and today, Fram is first in filtration and first in sales . . . the world's largest manufacturer of oil, air, fuel and water filters.

TIE IN WITH THE LEADER of the filtration industry. Sell nationally advertised . . . nationally accepted Fram Filters and Cartridges. Cash in on the outstanding Fram "Firsts" that have made automotive history.

NOW FRAM IS FIRST AGAIN with Complete Engine Protection . . . filters that seal out the deadly abrasives that rob miles from engine life, remove the harmful corrosives formed internally, seal in engine power, performance and life. And, Fram tests these filters for positive proof in the world's first giant Dust Tunnel.

BE FIRST IN SALES with the best in filtration. Cash in with Fram. See your Fram Distributor. And remember to ask every customer, "How's your Oil Filter?" It's the time-proven question that gets you under the hood and in the profit zone.

FRAM CORPORATION, Providence 16, R. I.
In Canada: J. C. Adams Co., Ltd., Toronto, Ont.

FRAM
OIL • AIR • FUEL • WATER
FILTERS

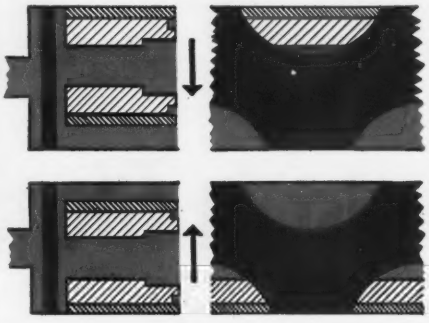




LEAK-PROOF OIL RING

GREATER OIL CONTROL CAPACITY

Here are two drawings, the two at the left are cross-sections of the ring and expander; the two at the right are straight-on views looking from the inside of the ring and expander to the outside. The red indicates the flow of oil.



A piston ring never stands still while a motor is in operation. On the up stroke of the piston the ring is at the bottom of the ring groove. On the downstroke, the ring is at the top of the ring groove. The oil behind the ring splashes from top to bottom. The arcs cut in the expander behind the Leak-Proof ring are on both top and bottom. Thus there is a greater and clearer flow of oil through the extra wide slots in the ring, through the top and bottom openings in the expander. The result is greater oil control capacity.

McQUAY-NORRIS
LEAK-PROOF
PISTON RINGS
FOR YOUR CAR

THE HIGH TENSION REVERSE LOOP EXPANDER





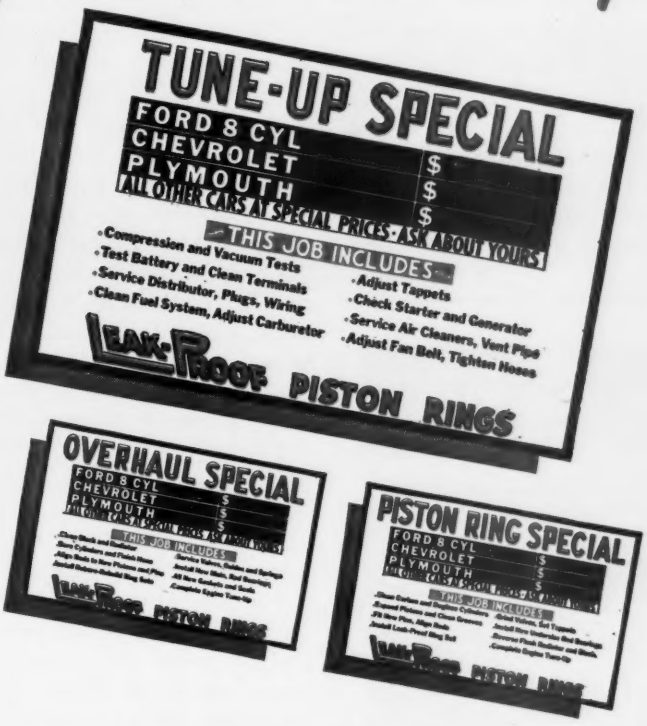
The High Tension Reverse Loop Expander in the Oil ring has all the advantages of the Compression Ring Expander.

1. Resists breaking.
2. Retains tension—does not "set."
3. Compensates for variations in ring groove depths.
4. Exerts more equal radial tension.

A series of circular arc sections are cut out of both sides of the expander at mathematically calculated intervals. High-Pressure ears are formed between these cutout arcs allowing independent pressure against the steel segments. This construction also gives the expander a uniform spring section all around its circumference.

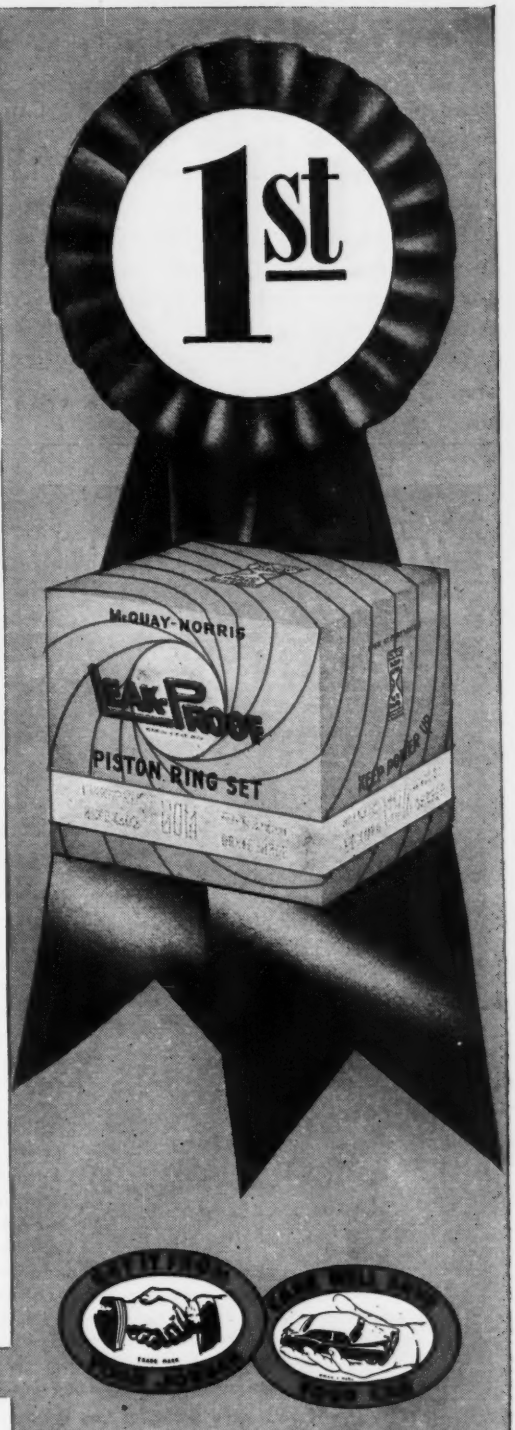
McQUAY-NORRIS MANUFACTURING CO.

Yours for the Asking



A SALES PLAN EVERY SERVICE DEPARTMENT CAN USE

This colorful sign, 44 x 28 inches, is really three signs in one . . . Is easily changed from TUNE-UP SPECIAL to PISTON RING SPECIAL to OVERHAUL SPECIAL. It comes with flat rate charts to figure prices. It's what you need because it shows your customers not only the cost, but what *you* do. First you SHOW 'EM, then you SIGN 'EM! That's good business today. Get this 3-way sign TODAY!



It's Yours for the Asking

Place your order for *only* four sets of LEAK-PROOF Piston Rings—the rings with the guarantee—and ask your McQuay-Norris jobber for one of these multi-purpose signs. You can buy the ring sets of your choice, and you will be billed by the jobber at your regular price. There is no extra charge for the plan. Could anything be fairer?

McQUAY-NORRIS MFG. CO. St. Louis 10, Mo.

Please send full details on "SIGN EM" to:

Name_____

Address_____

City_____ Zone____ State____

LEAK-PROOF PISTON RINGS

Powerglide . . . . . Continued from Page 116

gear and the drum bushing for excessive wear or damage. Check the band and the drum surfaces also.

If a buzzing sound is noticed in all ranges, check the pump gear for interference with the crescent. Also for low oil pressure.

If the engine is burning excessive fuel check the secondary pump for being locked to the hub of the primary pump, free wheeling cams are properly assembled in the secondary pump. Also check the piston vent valve for being stuck open.

If a ringing noise is noted in the converter, check for low oil level or the oil suction pipe not seating properly, causing pumps to suck air resulting in converter not receiving sufficient supply of oil. Check the pressure regulator valve for being stuck so that the converter inlet port is closed. Check the oil circuit for leaks between the front pump and the regulator valve.

If excessive drag is noted in reverse, check the clutch plates for improper adjustment and assembly, worn or binding in clutch flange or in the clutch hub. Check the clutch piston valve for being closed. If the car is jerky in reverse, check the clutch plates for being improperly assembled or sticking. Also check the clutch piston valve for being stuck closed.

Miscellaneous Noises: If clicking noises resulting from improper adjusted manual linkage causing interference between parking lock pawl and gear teeth, a buzzing noise resulting from low oil level or pump gear interference with the crescent and pump, and check valve not seating properly, can also result in this noise.

If a whine is noticeable, it could be caused by an excessive worn gear tooth or excessive clearance in pump gears or worn pump head bushings.

Make V-8 valve grind jobs Pay Off and Get a Double Profit by Installing

JOHNSON *adjustable tappets*



It's easier to sell tappets when the head is off. And you can make a double profit with less work by recommending Johnson Adjustable Tappets with your valve grind jobs. During a valve grind, lift out the old tappets and slip in Johnson Tappets. As simple as that you can make this double profit and save the hard work of grinding off valve stems.

Your customer is better satisfied because you can adjust Johnson Tappets to give him a smoother, quieter engine. Adjustment is simple. Special spanners included with each set of tappets leave both hands free to make faster, more accurate adjustments. Once you've set the patented self-locking screw, Johnson Tappets will maintain the setting.

There's more profit for you if you sell Johnson Adjustable Tappets with every Ford and Mercury V-8 valve grind. Order a supply of Johnson Tappets today.

SEE YOUR JOBBER!

"Tappets Are Our Business"

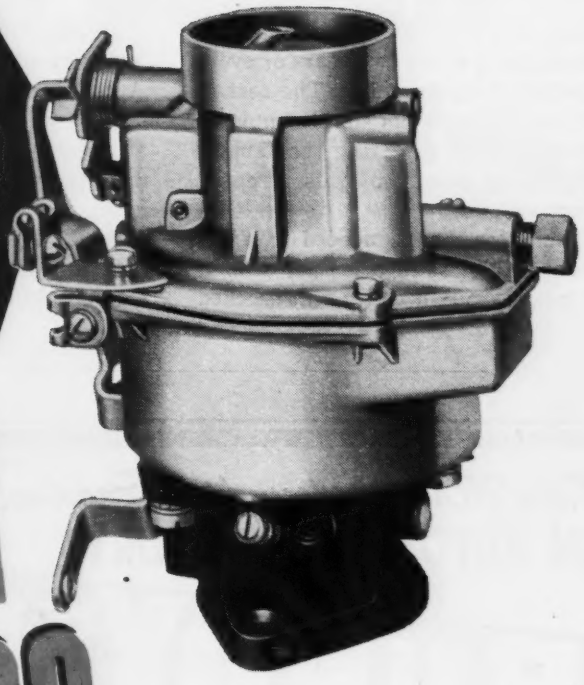
JOHNSON JP PRODUCTS INC.

MUSKEGON, MICHIGAN

Repair Jobs Increase as Parts Replacement Supply Shrinks

The slump in new car and used sales indicates that owners of older cars are preferring to expend money for repairs. Factory service departments report that individual repair orders are up considerably not only in number but also in dollar volume for both labor and parts. They also report that there is evidence of heavy inventory buying by wholesalers, dealers, and even repair shops against future shortages, all of which aggravates the shortage. A spark plug manufacturer reports that the normal float of 18 million plugs has been completely wiped out, with most of that amount going into field inventories. To determine how short some parts are, one company made a survey of its dealers in mid-February. It found 29,000 cars laid up for lack of parts, of which 16,000 were in dealerships, and 13,000 in independent repair shops.

Get set for your share of 11,000,000 customers!



ROCHESTER CARBURETORS

ROCHESTER CARBURETORS NOW ORIGINAL EQUIPMENT ON THESE GREAT CARS

CHEVROLET
1950—1951 models

OLDSMOBILE
1949—1951 models

PONTIAC "6"
1951 models

FIT ALL CHEVROLETS* BUILT FROM 1932

Stock Rochester Carburetors and you're ready to serve every Chevrolet built since 1932 that is likely to come your way. And this is your biggest market . . . your big-profit market.

Every Chevrolet owner gets 1951 carburetor performance when you install a Rochester . . . this is the same carburetor that is *original equipment* on 1950 and 1951 Chevrolets.

*EXCEPT CAB-OVER-ENGINE MODELS

Display ROCHESTER — and you'll sell CARBURETORS! Just order a small assortment of Rochester Carburetors now and you'll also receive an attractive display and window streamer to sell Rochester Carburetors for you. Call your distributor, or write us, today.

ROCHESTER OFFERS CUSTOMERS ALL THESE ADVANTAGES

- No fuel loss on any incline.
- Smooth acceleration on turns—at any speed.
- Easier starting in hot weather.
- Continuous fuel flow.
- Power mixture readily available.
- Acceleration—hot or cold.
- No metering adjustments.
- All metering parts in cover.
- Permanent idle tube.

ROCHESTER CARBURETORS—A UNITED MOTORS LINE
Available everywhere through
UNITED MOTORS DISTRIBUTORS

UNITED SERVICE MOTORS

ROCHESTER PRODUCTS
DIVISION OF GENERAL MOTORS, ROCHESTER, NEW YORK

facturers recommend that fan belts be replaced every two years or every twenty thousand miles. The cost of this replacement is slight compared to the cost of repairing the damage caused by failure of this essential part.

Radiator hoses needed replacement in almost thirteen per cent of the cars examined. Rotted, cracked or leaking, these hoses are a hazard to trouble free summer driving. A collapsed lower hose can cut off cooling water and cause rapid ruination of the engine. Oil, grease, heat and general deterioration will cause hoses to fail in several different ways. If the hose is oil soaked and soft, it may be forced off the radiator or block neck due to the pressure within the cooling system. The results of this type of failure may be disasterous to everything under the hood. The owner is always inclined to think of the last mechanic who worked on his car when trouble arises, and even if he stops his engine before damage occurs, some shop's reputation is damaged.

Slow leakage and seapage are common results of bad hoses. If a hose looks wet and soggy on the outside and is leaking only slightly, remember that it looks ten times worse on the inside and will probably fail completely in a short time.

An excessively hard hose is just as dangerous as a worn one. Besides the fact that a hose which has been hardened by heat and old age may crack and break, it has another and more serious effect. An engine which is mounted on rubber has considerable motion between itself and the radiator. The connection must be quite flexible or serious damage can occur to the radiator as well as to the hose. Hardened rubber cannot flex adequately and should be replaced. Lifting hoods and making a thirty-second check on fan belts and hoses costs little and pays well. The importance lies as much in the unfavorable results of failure to sell necessary replacements as in the profits and good will resulting from selling fan belts and hoses when they are needed.

The Most Astounding Product Acceptance
IN AUTOMOTIVE HISTORY!

BUNDYFLEX
SUPER-SOFT COPPER-FUSED **METAL TUBING**

FOR BRAKE LINES, FUEL LINES, OIL LINES, OIL FILTER LINES, WINDSHIELD WIPER LINES, ETC.



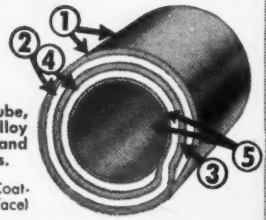
STANDARD EQUIPMENT MORE THAN 20 YEARS ON PASSENGER CARS, TRUCKS BUSES and FARM TRACTORS

FORD
MERCURY
LINCOLN
CHRYSLER
DODGE
DE SOTO
PLYMOUTH
CHEVROLET
PONTIAC
OLDSMOBILE
BUICK
CADILLAC
PACKARD
KAISER
FRAZER
HUDSON
NASH
STUDEBAKER
WILLYS
CROSLEY
•
DIAMOND-T
FEDERAL
G.M.C.
INTERNATIONAL
JEEP
MACK
REO
•
Standard Equipment on Refrigeration, Air Conditioning, Oil and Gas Heating and Industrial Apparatus, Airplanes, Diesel Locomotives, etc.
•

Always Better than Copper Tubing for Repairs and Replacements



Easy TO BEND, FLARE, SOLDER, BRAZE and WELD



5 PROTECTIVE LAYERS

Continuous Double-Wall Steel Tube, Fused Together with Copper-Steel Alloy Binder. Copper-Steel Alloy Inside and Outside Surfaces. No Welded Seams.

1. Copper-Steel Alloy Coating (protects outer surface)
2. Outer Super-Soft Steel Wall
3. Fused Copper-Steel Alloy Center (unites 2 steel walls)
4. Inner Super-Soft Steel Wall
5. Copper-Steel Alloy Lining (protects inner surface)



25-Ft. Coils: 1/8" 3/16" 1/4" 5/16" 3/8"
12-Ft. Straight Lengths: 7/16" 1/2" 5/8"

EVERHOT PRODUCTS CO. 2001-9 W. CARROLL AVE. CHICAGO 12, ILLINOIS
West Coast Warehouse 1305 South Hope St., Los Angeles 15, Calif.



"It's the last time I'll let him caddy for me!"

New Britain WRENCHES

PUT POWER WHERE IT COUNTS





You'll breeze through the toughest nut-turning jobs with New Britain Wrenches . . . because these famous, power-packed Tools were designed by mechanics for mechanics! Precision milled heads slip on easily for New Britain's "sweet fit *on the nut*". Beneath that beautiful, triple-plated chrome finish is a brawny, rugged backbone of the finest alloy steel, scientifically heat treated to the ultimate in strength and durability. One "feel" of the long reaching, slim balance of these great Wrenches and you'll get the thrill—and thrift—of dependable Tools that will serve you well for years. Just *compare* New Britain's attractive prices!

Your jobber has New Britain in Open End, Tappet, Box and Combination Wrenches in a complete range of styles and sizes, plus many handy Wrench Sets ready for you. In fact, whenever you need *any tool,* the brilliant New Britain Line is as near as a phone call to your Jobber! The New Britain Machine Co., New Britain, Conn.

N·A·P·A National Automotive Parts Association Assurance of Quality

New Britain

GREATER STRENGTH · BETTER FIT **HAND TOOLS**

"Keep 'Em Rolling"

Bob Hill of FARM JOURNAL has been invited to speak at a dealer meeting in Falls Hills, trading center for a typical agricultural county.

FELLOWS, I'D LIKE YOU TO MEET BOB HILL FROM FARM JOURNAL. WE'VE ALL BEEN INTERESTED IN FARM JOURNAL'S "KEEP 'EM ROLLING" CAMPAIGN AND I KNOW YOU'LL HAVE SOME QUESTIONS FOR BOB. HOW ABOUT YOU, JOE?

THAT'S SWELL. DO YOU DO ALL THIS RIGHT IN THE MAGAZINE?

YOU BET. THERE'S A BIG FEATURE ARTICLE BEFORE EACH SEASON'S DIFFERENT PROBLEMS COME UP: FALL, WINTER, SPRING AND SUMMER. WHICH REMINDS ME—THE JULY ISSUE OF FARM JOURNAL WITH ITS SUMMER MAINTENANCE ROUND-UP WILL REACH YOUR CUSTOMERS JUNE 18, AND NOW'S THE TIME TO PLAN YOUR LOCAL TIE-IN PROMOTIONS.

INCIDENTALLY, BOB, THESE ARTICLES OF YOURS ARE CERTAINLY GETTING READ, AT LEAST BY MY CUSTOMERS. HOW ABOUT THE REST OF YOU FELLOWS?

MINE TOO. SURE. I'VE NOTICED IT.

I'M GLAD TO HEAR YOU SAY THAT, FOR IT'S THE KIND OF RESPONSE WE'RE GETTING ALL OVER THE COUNTRY. WE KNOW THE "KEEP 'EM ROLLING" FEATURES ARE AMONG THE MOST THOROUGHLY READ IN FARM JOURNAL. WHEN WE RAN A LITTLE BOX INVITING READERS TO SEND IN THEIR OWN SUGGESTIONS, WE GOT OVER 900 REPLIES.

THAT'S WHAT WE HEARD IN LOTS OF TOWNS JUST LIKE YOURS. WHAT YOU DEALERS WANT IS REAL LOCAL SUPPORT—THOROUGH COVERAGE AMONG YOUR OWN CUSTOMERS AND PROSPECTS— AND THAT'S JUST WHAT FARM JOURNAL GIVES YOU. IN FACT, IN A COMMUNITY LIKE THIS, FARM JOURNAL WILL BLANKET OUT-OF-TOWN CUSTOMERS LIKE THE LOCAL NEWSPAPER.

. . .

IT WORKS IN THE BIG CITIES, TOO. WE HAD ONE DEALER WHO KEPT WRITING IN FOR MORE AND MORE MATERIAL. HE SAID "I GUESS YOU THINK IT'S FUNNY THAT I'M TYING IN WITH YOUR PROGRAM, BUT I DO A BIG TRUCK BUSINESS, AND MY OUT-OF-TOWN CUSTOMERS SURE BUY TRUCKS!"

THE BIG THING ABOUT "KEEP 'EM ROLLING" IS THIS: YOUR OUT-OF-TOWN CUSTOMERS ARE YOUR BEST CUSTOMERS. MORE OF THEM OWN CARS. MOST OF THE TRUCKS AND ALL THE TRACTORS ARE OUT THERE. WHEN FARM JOURNAL STIRS THEIR INTEREST IN BETTER MAINTENANCE, YOU HAVE A GOOD CHANCE TO PROFIT. YOU JUST CAN'T HELP IT. IF YOU DO YOUR PART.

I THINK WE'D ALL LIKE TO HEAR FROM YOU, MR. HILL, JUST WHAT THIS CAMPAIGN IS ALL ABOUT.

EDITORIALLY, WE HELP OUR MILLIONS OF READERS GET MORE OUT OF THEIR MOTORIZED EQUIPMENT BY REMINDING THEM TO GIVE IT THE RIGHT CARE AT THE RIGHT TIME. THIS GIVES YOU FELLOWS A SWELL CHANCE TO FOLLOW THROUGH LOCALLY AND GET MORE SERVICE BUSINESS — WHEN YOU WANT IT.

WHAT DO YOU MEAN BY "WHEN WE WANT IT"?

WELL, WE KNOW ALL TOO OFTEN YOUR FARM CUSTOMERS WAIT TILL THE VERY LAST MINUTE TO GET THEIR SERVICE WORK DONE. IN THIS CAMPAIGN WE POINT OUT THE SENSE OF GETTING TOGETHER WITH YOU EARLY IN THE SEASON. THAT GIVES YOU A CHANCE TO GET THE WORK IN WHEN YOU CAN HANDLE IT AND PROFIT FROM IT.

OF COURSE, OUR READERS AREN'T THE ONLY PEOPLE INTERESTED IN "KEEP 'EM ROLLING." WE COULDN'T HAVE STARTED IT WITHOUT MANUFACTURERS' SUPPORT. THEY'RE WORKING RIGHT ALONG WITH US. THEY KNOW WHAT A LOT OF PROFITS THERE ARE IN THE SERVICE WORK ON OUR SUBSCRIBERS' 6¼ MILLION MOTOR UNITS.

AND AS FOR DEALERS LIKE YOURSELVES... WELL, I'D RATHER ASK ONE OF YOU WHO HAVE ALREADY COOPERATED LOCALLY.

I CAN SPEAK ABOUT THAT, MR. HILL. I MAY HAVE BEEN A LITTLE SKEPTICAL AT FIRST, BUT AFTER I'D MAILED OUT THE PRINTED POSTCARDS AND USED A COUPLE OF DOLLARS' WORTH OF CLASSIFIED ADS IN THE LOCAL PAPER, I CERTAINLY GOT RESULTS. IT SHOWED RIGHT UP IN THE SHOP RECORDS.

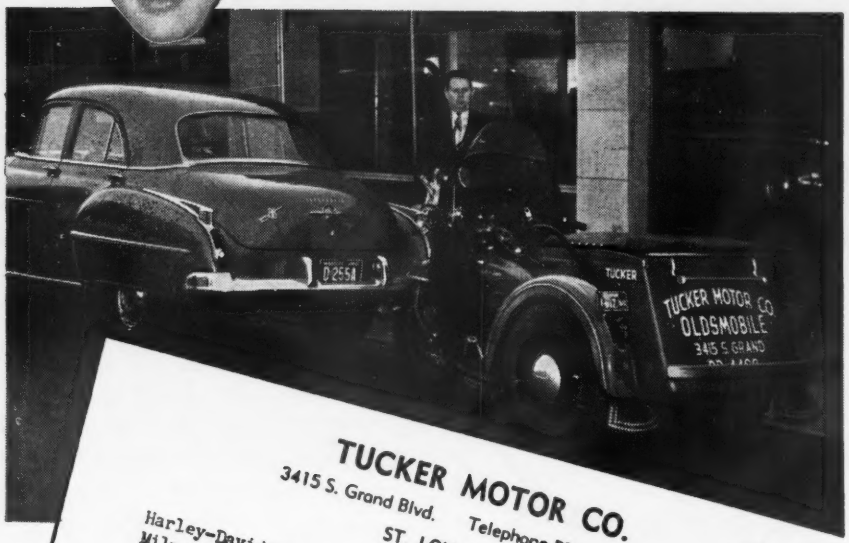
TIMING, AS I'VE SAID BEFORE, IS EXTREMELY IMPORTANT. YOU WANT TO GET THIS BUSINESS WHEN YOU CAN PROFIT FROM IT. FARM JOURNAL WANTS ITS READERS TO COME TO YOU BEFORE THEIR EQUIPMENT NEEDS MAINTENANCE. WE'LL DO OUR PART — IF YOU WILL DO YOURS. KEEP HITTING AT THE "KEEP 'EM ROLLING" IDEA. USE THE MAILS. USE YOUR LOCAL NEWSPAPER. USE THE MATERIAL YOUR SUPPLIERS HAVE FURNISHED YOU. REMEMBER, THE NEXT BIG "KEEP 'EM ROLLING" PROMOTION APPEARS IN THE JULY. ISSUE. IT WILL REACH YOUR CUSTOMERS JUNE 18.



"90% SAVING

IN PICK-UP AND DELIVERY COSTS"

Says Percy Tucker, President, Tucker Motor Co. St. Louis, Mo.



TUCKER MOTOR CO.
3415 S. Grand Blvd. Telephone PRospect 4400
ST. LOUIS 18, MO.

November 25, 1950

Harley-Davidson Motor Co.
Milwaukee 1, Wisconsin

Gentlemen:

We were the first automobile company to use a Harley-Davidson Servi-Car in St. Louis. Purchased our first unit in 1932 and have been using one ever since. We have just received our 1951 model and we think it's the best Servi-Car we have ever used.

The Harley-Davidson Servi-Car operates very economically and trouble free. We consider it one of our most important service units and indispensable to our Service Department. It saves us practically 90% of our pick-up and delivery costs and find it very handy in picking up parts, supplies and for many errands.

With traffic congestion the way it is, our Servi-Car picks up and delivers cars with the least amount of time and expense, besides making it easy for our customers to do business with us. This makes it possible for us to get practically 100% of our customers' business and not leave them open to go elsewhere. We also know it is a good medium of advertising. A phone call and we call for their cars and deliver them when the work has been completed, thereby, saving our customers valuable time -- no going out of their way to do business with us.

We could not and would not be without a Harley-Davidson Servi-Car.

Very truly yours,
TUCKER MOTOR CO.
BY Percy Tucker



Servi-Cars can help you. Send for this free booklet. See your Harley-Davidson dealer.

SERVI-CAR

SERVICE SELLS MORE SERVICE

HARLEY-DAVIDSON MOTOR CO. • Dept. MA • Milwaukee 1, Wis.

Frames

Continued from Page 58

from the floor to the bottom of the frame and mark each measurement on the floor at that point. Every measurement should be the same as the one directly across from it on the other side of the frame. (Sagging springs, or tires which are inflated to varying pressures or worn to vastly different degrees will affect these measurements. Check them first. Setting the frame on horses of equal heights at the four corners will help to eliminate the effect of sagging springs.)

If the measurements from the floor are the same as the corresponding points along the frame, the frame is okay so far as twisting is concerned. Of course, these measurements will not show a sagging frame when the sag is equal on both sides and at the same location at both sides. This condition, however, is rare in passenger cars, and an examination of the fit of the doors will show up such a condition.



"You say it heats up pretty bad?"

With as many as possible of these points projected to the floor, measure from one extreme point on the left side to the other extreme point on the right. Repeat this measuring from right to left on the opposite sides. This makes an X across the frame. These measurements should be equal. If they are, and if the measurements from the floor up to the frame prove to be O K, the frame is probably undamaged.

If, however, the cross measurements prove to be unequal, the damaged portion is located by the process of elimination in the following manner.

(*Continued on page* 128)

HERE'S A REAL MONEY-MAKER FOR YOU

. . . and it doesn't cost you a cent!

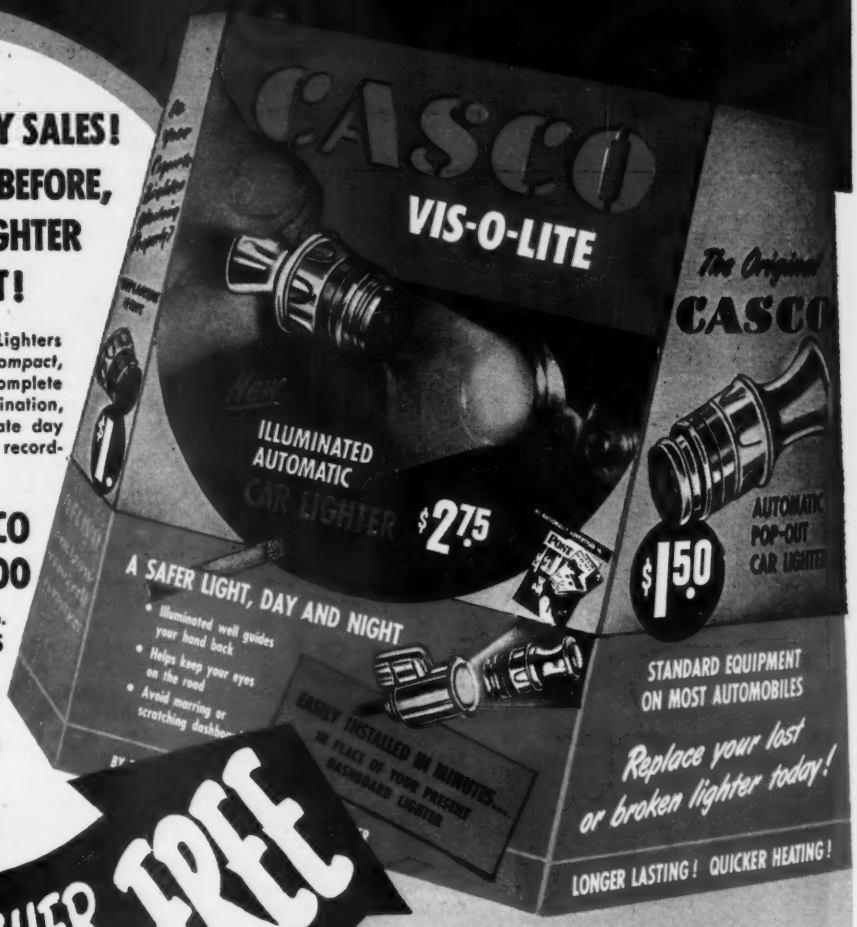
MAKE QUICK, EASY SALES! CASH IN, AS NEVER BEFORE, ON THE HUGE CAR-LIGHTER REPLACEMENT MARKET!

Surveys show 3 out of 5 car owners have Lighters that are burned out, lost or stolen. This compact, colorful counter and window display, complete with action-flasher and new type illumination, costs only 2½ cents per month to operate day and night — yet tests show it rings up record-breaking sales every day in the week!

WITH EACH *Extra-Value* CASCO LIGHTER DEAL No. L 500

CONSISTING OF:	Retail Price Ea.
6 VIS-O-LITE ILLUMINATED LIGHTERS	$2.75
6 CASCO "POP-OUT" REPLACEMENTS	$1.50
6 CASCO REPLACEMENT HEATING ELEMENTS	$1.00

YOU GET THIS *Action Packed* FLASHER ILLUMINATED SALES-MAKER FREE



Remember, you get the exciting, sales-making display with only a minimum purchase of standard stock merchandise at **regular dealer discounts...** only 6 of each item . . . each displayed for quick, easy selling right off the counter. Stock replacements by your wholesaler enable you to make year-round profits! Complete kit of other helpful advertising material supplied with each L500 Display Deal!

ORDER DISPLAY DEAL L 500

THRU YOUR JOBBER

It consists of



6 CASCO VIS-O-LITE AUTOMATIC ILLUMINATED CIGARETTE LIGHTERS
Exclusive Vis-O-Lite illuminated dashboard well guides hand swiftly back, avoids scratched dash, keeps eyes on road. Individually boxed — 6 to display carton.
No. L31 $2.75 FAIR TRADED

6 CASCO REPLACEMENT AUTOMATIC "POP-OUT" UNITS
Heavy Chrome knob blends neatly with other accessories on dashboard. Fits all Casco-made lighter dash wells. Packed 6 units to a display card.
No. L33 $1.50 FAIR TRADED

6 CASCO REPLACEMENT LIGHTER HEATING ELEMENTS
Replacement for burned out, weak or slow lighters. Simply screw onto original equipment knob. Packed 6 mounted on a counter display card.
No. L22 $1.00 FAIR TRADED

PLUS YOUR FREE SALES-MAKER DISPLAY

For new and unusual automotive accessories
Casco Products Corporation • Bridgeport 2 Conn.

CASCO

Measuring Frames . . . Continued from Page 126

Measure from one point at the far end of the right side of the frame to another point about halfway up the other side of the frame. Then measure from the end point on the left side of the frame to the corresponding halfway point on the right side. This makes a smaller X on the frame, which should measure O. K. if that portion of the frame is undamaged. The measuring process must be continued throughout various areas of the frame until a variation in measurements is discovered. Then measurements are taken within the portion where the discrepancy has been found until the limits of the damaged area are discovered. By taking cross measurements, connecting the intersecting points of the cross lines with a straight line (to form a center line) and measuring widths at different points along the frame, a good picture of the type of damage can be ascertained.

For instance, if the frame is measured and the overall cross measurement shows one diagonal to be shorter than the other, the frame can be broken down into areas to take further measurements. When the general location of the damage has been found, finer measurements within that area can be taken. By using a chalk line to mark the measurements which are taken, an actual diagram of the frame can be made on the floor. In the case mentioned above, if the damaged area were found to be in the center, the length of the frame could be measured on both sides and measurements compared. A shorter measurement on the left side, for instance, would show that the frame was probably buckled on that side. This can be further checked by taking width measurements within the damaged area.

Another method of measuring frames for damage makes use of the actual factory specifications for the car. In this case the car is placed on a flat floor and *Chilton's Motor Age Body and Frame Manual* opened to the particular frame diagram for that car. The points of measurement on that frame are used from which to drop the plumb-bob. Then the measurements can be taken from which-ever of these points are necessary and compared with those listed in the *Manual*.

OTC Announces

NEW POWER-TWIN HYDRAULIC PULLER

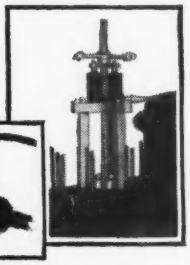
The greatest advancement in push-pulling equipment since OTC Grip-O-Matic.

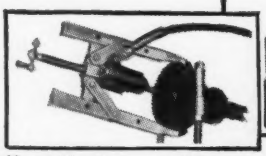
√Fits all OTC Pulling Units √Twin Cylinders — Develops 17½ tons power √Works in any position √Eliminates torque . . . Eliminates friction √Light, compact, easy to handle √Safer, because of remote control

The fastest, easiest working, handiest Push-Puller in history. Eliminates all need for strong arm methods. A real time, money and labor saver. Sensational in performance, the Power-Twin Hydraulic Puller is a must for every shop. See your jobber for information or write us.



Pulling and installing wet or dry cylinder sleeves is simple with O.T.C. Power-Twin Sleeve Puller.





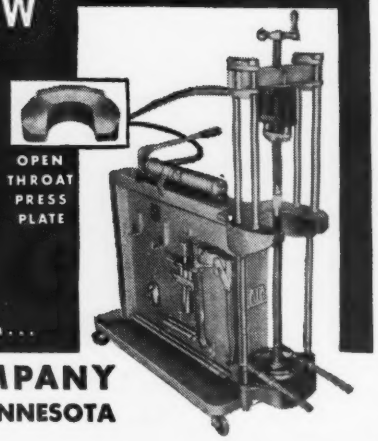
No problem to remove drive gear with OTC Power-Twin and 1003-L Grip-O-Matic.

WITH THE CENTER HOLE, Power-Twin does jobs no other hydraulic ram can do . . . Applies direct force . . . Fast, easy, unlimited adjustment . . . Quick, simple interchange of parts . . . Permits use of adjusting screws.

OTC - PLUS THE NEW HYDRA-TOTE!

Portable hydraulic pulling unit. Holds complete OTC push-pulling system and adaptors . . . Easily moved to any spot in the shop, always right on the job . . . 36 inch clearance below press is enough to hold any job.

Open Throat Press Plate . . . Available separately for mounting on bench or service truck . . . Can be used with OTC Power-Twin for permanent hydraulic press.



TAKE YOUR TOOLS TO THE JOB
Where You Need Them . . . When You Need Them . . .

OWATONNA TOOL COMPANY
321 CEDAR STREET OWATONNA, MINNESOTA



"I told you the roof is leaking worse than ever!"

DEVILBISS

You'll profit with these products

The use of DeVilbiss equipment for your jobs is the beginning of better profits for you. It has happened this way in hundreds of cases. It will in yours, too. You'll save time, trouble and get better results with DeVilbiss products: Spray Equipment, Exhaust Systems, Air Compressors, Hose and Connections. Read on . . .



BUTTON UP YOUR UNDERCOAT JOBS!

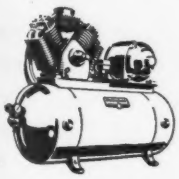
And there's no better or more profitable way to do it than with a DeVilbiss Spray Outfit for underbody coating.

Here's why: Air-operated barrel pump delivers direct from original drum; 2 regulators assure perfect balance of air pressure and fluid flow; DeVilbiss MBC Spray Gun (the standard of the industry) coats surfaces rapidly, thoroughly, uniformly. It's a complete packaged outfit, ready to go to work the day you get it.

You'll find all DeVilbiss products—Exhaust Systems, Spray Equipment, Air Compressors and Hose—ideally suited to handle your job requirements. Many operators find that DeVilbiss equipment plus a planned "appearance service" program actually accounts for a *third* of their service volume.

Interested? Contact your DeVilbiss Jobber or our nearest branch office for details.

THE DEVILBISS COMPANY
Toledo, Ohio
Windsor, Ontario • London, England
Santa Clara, Calif.
Branch Offices in Principal Cities



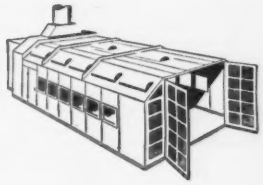
Air Compressors



Hose and Connections



Spray Guns



Spray Booths

FOR BETTER SERVICE, BUY
DEVILBISS

of the responsibility he assumes when he uses the family car.

We also cooperate with the universities and colleges of the state in their teacher training programs, making our contributions to the Driver Education instructor training by cooperating where necessary, in making the training cars, materials, etc., available to these institutions for use in their training programs. We have further cooperated with the Michigan Department of Public Instruction in contributing to the publication of the official manual of Driver Education "They are Going to Drive." This manual is the first official publication on Driver Education by the Department of Public Instruction.

I personally have given wholeheartedly of my time and efforts in furthering safe driving. The Louis Rose Company sponsors a Driver Training School at our establishment, and offers both "Behind the Wheel" and class room instruction to the people of Detroit. I am a member of the Advisory Committee of the Michigan State Safety Commission, supporting the various traffic safety activities on a state level, the Detroit Traffic Safety Association, and president of the Michigan Inter-Industry Highway Safety Foundation. Here at the Louis Rose Company we devote much of our advertising space to safety.

For the past few years the Greater Detroit Plymouth Dealers Association has sponsored an early morning radio program, with the cooperation of the Detroit Police Department, designed to inform Detroiters of weather conditions, traffic hazards, detours, etc. This program has been very enthusiastically received, and has paid dividends to the Plymouth dealers in good will. The Detroit DeSoto dealers' association has also given generously of their advertising space for the promotion of traffic safety. We firmly believe that not only should we sell out product, but that we should advertise the safe use of same.

If we, as automobile dealers, exercise our sense of responsibility and do all within our power to further the introduction and support of Driver Education Programs, and not wait for someone else to do it, I sincerely believe that the appalling accident and fatality rate of this nation may be substantially and immediately lowered.



Sell COMPLETE SETS of Johnson Bearings • —it's sound practice

YOU can assure a customer of greatly improved motor performance with a complete new set of bearings. So, while the motor is down, it is wise to replace all bearings, regardless of condition. The labor charge remains virtually the same—the bearing cost is comparatively small—only about ⅓ to ⅕ of the complete job. So it is good business for both you and the customer to install a complete set of new Johnson Bearings.

SLEEVE BEARING HEADQUARTERS Since 1901
Johnson Bronze
455 SOUTH MILL STREET • NEW CASTLE, PA.
GET IT FROM YOUR JOBBER

BE FAMILIAR WITH THE JOHNSON BEARING LINE—WRITE TODAY FOR CATALOG.

Willys Reports Great Increase In Replacement Parts Business

Willys-Overland reports a tremendous upsurge in its replacement parts business during the first quarter of this year. Shipments to dealers were 53 per cent above the previous quarter and 57 per cent ahead of the same period a year ago.

YOURS! with our Compliments!

THIS MONEY-MAKING PEDAL BLOK!



• FINDS BRAKE WORK WITHOUT PULLING A WHEEL

• SELLS ADJUSTMENTS • FLUID • REPAIRS • RELINES!

A terrific business builder! Repairmen tell us it increases their brake business 20, 30, even 40 percent! And it only takes a minute!

Step up *your* brake repair work. Cash in on this rich, untapped market! Reduce accidents, save lives. Let us send a Pedal Blok to you without cost, or obligation. Mail the coupon today!

NAPA Assurance of Quality

NOTHING TO PAY! NO OBLIGATION!

MAIL THIS COUPON NOW!

American Brakeblok Division
Dept. A, 4612 Merritt Ave.
Detroit 9, Mich.

Rush me your free Pedal Blok, without obligation.

Name_____

Address_____

City_____ Zone____ State_____

Ordered by_____

AMERICAN Brake Shoe COMPANY

AMERICAN BRAKEBLOK DIVISION
DETROIT 9, MICHIGAN

Indianapolis . . . . . Continued from Page 45

driver, Mike Nazaruk, in the Jim Robbins Special, and third to Jack McGrath and his relief driver, Manuel Ayulo, in the Hinkle Special. Actually only six cars of the original field of thirty-three entrants crossed the finish line; the remainder being flagged down or in the money although not on the track at the time the victory was completed.

Although the new profile tire had a lot to do with setting the new speed record, the exceptionally fast pace meant that more pit stops were necessitated for tire changes this year.

Each year the cars go faster and faster on practically the same engine and chassis. So what is the reason for the additional speed? Most men believe that the increased speed is due mostly to the driver taking the car deeper into turns and from mechanical improvements on the engine. Most of the cars entered today are using fuel injection and are running on a mixture of alcohol. Also the compression ratio averages close to 15-1. Then, too, the spark plugs have been improved plus better piston rings and valves, etc. The new profile tires add a few miles per hour by holding the cars in the groove when making the turns.

There are all types of suspension being tried, torsion bar, torsdastic transverse and Dedion, but regardless of the type used they come close to each other on the lap speeds.

At least one car this year tried water injection along with fuel injection. This was the W and J Special, driven by Johnnie McDowell.

One new front wheel drive car was entered as the Tuffonelli and Derrico Special, driven by Mack Hellings. It was built on the West Coast by Emil Deidt. At least four entries used disk brakes and the drivers claim they do a good job.

Of the 33 cars entered, only two were V8's and the remainder were four cylinder engines.

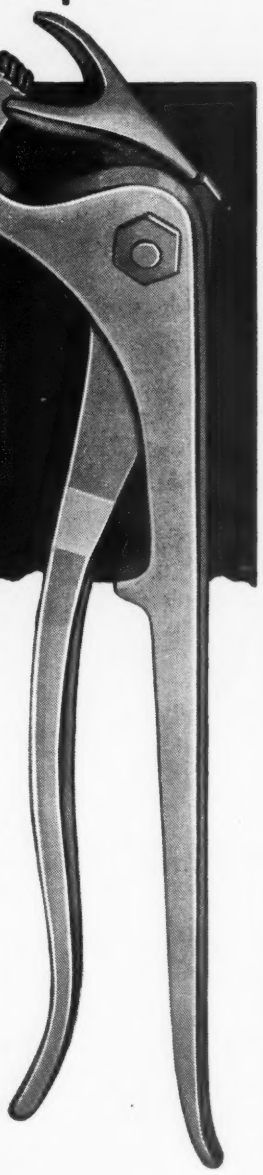
Automotive Export Market Shows Strong Uptrend

While sales of new cars in this country have softened considerably, the export market appears to be getting stronger month by month. If the rate of exports of cars and trucks during the first quarter of this year continues, 1951 sales abroad may total one-half million for the second best post-war year and the fourth best year on record. During the first quarter 126,644 vehicles were exported or about six per cent of total production. While this figure, if it holds through the year, would not be up to the average of 10 per cent in most prewar years, it is about double the percentage prevailing in 1950. First quarter exports of cars, trucks, and buses were 118 per cent above the same period a year ago. Sales abroad in March were nearly three times the level of the same month in 1950.



they're off at the post!

Herbrand's
TOOL-OF-THE-MONTH
BATTERY TERMINAL LIFTER and SCRAPER
NO. 177



For real efficiency at removing battery terminals from the post and cleaning the connections, there is no tool to compare with the exclusively designed Herbrand No. 177.

Badly frozen or corroded battery terminals snap up easily under its powerful leverage. It will not mar, crack or loosen the plates or damage the tops of the cells or posts. A special release joint separates the tool into two pieces—one section with a serrated nose for cleaning the inside of the terminals and the other with sharp jaw for scraping the posts.

The No. 177 is drop forged from triple alloy steel—engineer designed and fully guaranteed.

Mechanic's Net $3.50

HERBRAND
Herbrand
VAN-CHROME TOOLS
. . . the finest money can buy!

The No. 177 is Herbrand's current TOOL-OF-THE-MONTH selection. See it at your Herbrand distributor or write us.

Herbrand Tools, Fremont 7, Ohio



Ring Controlled* Power...

FOR POSITIVE BUT GENTLE ACTION!

A new standard of ride control is being set by Gabriel's new Hydr-O-Shox! At all speeds . . . at all driving temperatures, Gabriel's revolutionary new ring-controlled piston design successfully absorbs sharp compression and harsh spring rebound. Throughout all riding conditions, Hydr-O-Shox provide firm action . . . not harsh . . . not soft . . . but positive and smooth. Hydr-O-Shox are your answer to the insistent demand of motorists for better riding and easier car handling. Stock and sell Hydr-O-Shox and customers come back smiling.

THE GABRIEL COMPANY
Cleveland 3, Ohio



* Patents referred to herein are Gabriel Patent Nos. 2,369,007, 2,394,356, 2,396,227. Other Patents Pending.

GABRIEL HYDR-O-SHOX

ANTENNAS • THERMOSTATS • COIL SPRINGS • FLEXIBLE TUBING • HELPER SPRINGS • METALUME & "CELASTIC"

NPA Administrator Believes In 'Essentiality' of Cars

Manly Fleischmann, NPA head, says his agency is well aware of the importance of the automobile for transportation of defense and other workers.

He said bluntly that "automobile production must be maintained at the highest levels possible." This is what is happening.

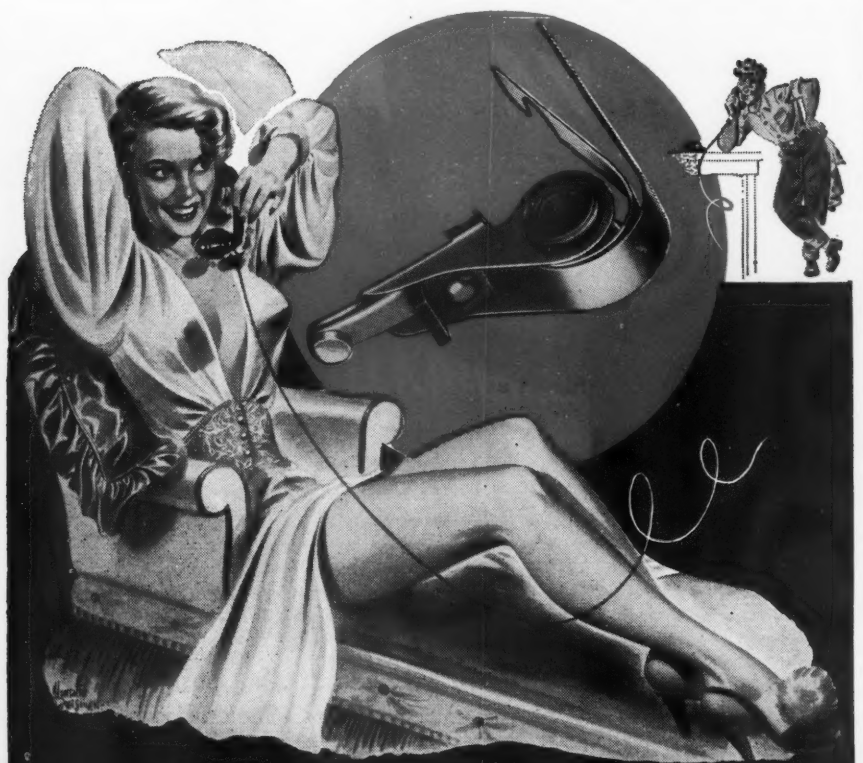
Currently, automobile manufacturers will be forbidden to use, during the months of July, August and September, more than 65 per cent of the steel consumed during the base period. Copper use will be held down to 60 per cent and aluminum to 50 per cent. A plea by the industry that these percentages be increased by 5 per cent was turned down. Fleischmann explained that these are the figures which the third quarter trial-run of the Controlled Materials Plan provides and could not be changed.

According to estimates of metal requirements compiled by the Defense Production Administration—on which NPA will base its allocations under the CMP—Fleischmann believes that third quarter production of passenger cars will stay at a relatively high rate.

If there are indications that motor vehicle production is going to be seriously hurt under the current system, NPA promises, the industry will be included in CMP beginning with the fourth quarter. Thus, definite allocations of the three metals would be made for the industry the same as for the other essential defense production. Industry members will be called in, in this event, to help decide how much is needed and where it is to come from.

While the CMP is having its trial run during the third quarter, however, the NPA generally takes the position that automobile production will not drop below base period output by more than one-third. This is not a unanimous agency belief, by any means.

In some quarters it is pointed out that it would require nearly 2,000,000 tons of steel to keep third-quarter automobile output at 65 per cent of base-period levels. This amount is roughly one-third of all steel which is estimated to be available for all types of non-defense consumer durables for the quarter.



For Best Results . . . CONTACTS Must Be Good!

All these ECHLIN Extras at no extra cost to you . . .

MIRROR FINISH TUNGSTEN — FREE FLOATING SPRING

COPPER CONDUCTOR STRIP — GREATER PRECISION

NAPA

ECHLIN Ignition

A PRODUCT OF ECHLIN

CONTACTS
COILS • CONDENSERS
& OTHER AUTOMOTIVE
ELECTRICAL PARTS

ECHLIN MANUFACTURING COMPANY, Dept. MA, 220 EAST ST., NEW HAVEN 5, CONN.



"I am sorry Mr. Quimby, but your checks are overdrawn!"

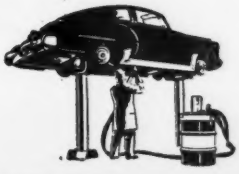
50% MORE PROFIT

WITH CONCENTRATED

LION Nōkōrōde

UNDERCAR SEALER AND SILENCER

150 Perfect undercoating jobs at the cost of 100



IT'S SIMPLE ARITHMETIC!

Most ordinary undercoatings contain a large percentage of solvent. You spray these undercoatings to a 1/8" thickness—but when the solvent dries out, you're left with about 1/16" thickness.

Lion Nokorode Under-Car Sealer and Silencer is *concentrated*. You spray Nokorode to 1/16" thickness—and it dries to almost 1/16" thickness. There's no wasteful excess solvent.

Result: You can do half again as many cars with *the same amount* of Lion Nokorode as you'd do with ordinary undercoatings. Yet Nokorode costs no more. Drum for drum, *you make 50% more profit with Nokorode!* Nokorode is *uniform*, for smooth application. It's *homogenized*—won't clog guns. And it's *guaranteed* to give complete customer satisfaction. Start making money with Nokorode—send the coupon below *now!*

Made Under The Process Of U. S. Patent No. 2,393,774

WE HELP YOU SELL Nōkōrōde

WITH POWERFUL ADS IN THE

SATURDAY EVENING **POST** AND TIME

LION

Made and Guaranteed by

LION OIL COMPANY EL DORADO, ARKANSAS

FREE! How To Make More Money From Undercoating!



LION OIL COMPANY, El Dorado, Arkansas

Please send me complete details on how I can increase my undercoating profits with Lion Nokorode Under-Car Sealer and Silencer.

Name_____

Street or Route_____

City_____ State_____

Brand of undercoating I am now using, if any_____

New Products . . . . . Continued from Page 54

286. Body Tool Kit

The Marflow Division of the Steelcrafters Company is featuring a Air Quick Auto Body tool. Packaged in ten and nineteen tool cases and powered by a pneumatic gun, these tools are designed for use in both large and small auto shops. The large nineteen piece Journeyman set Model RC includes an air gun, panel cutters, weld buster, rivet cutter, cold chisel, metal screw hole punch, taper punch, goo scraper, forming head, peining tool, hinge pin puller, wood chisel, paneling tool, edger, flanger, smoothing hammer, ripping tool, rubber hammer, shackle tool and holder spring.

BRUNNER SINCE 1906 AIR helps you serve better



PLEASE SEND ME the 1951 Brunner Catalog which not only illustrates Brunner Air Compressors from 1/4 hp to 15 hp, but also contains considerable information on how to select capacity and provide an efficient, economical air supply to the various air powered tools and equipment so essential to building profits from automotive service.

Here's a coupon big enough to write in . . . and sincerely, we suggest you use it!

Name

Company

Address

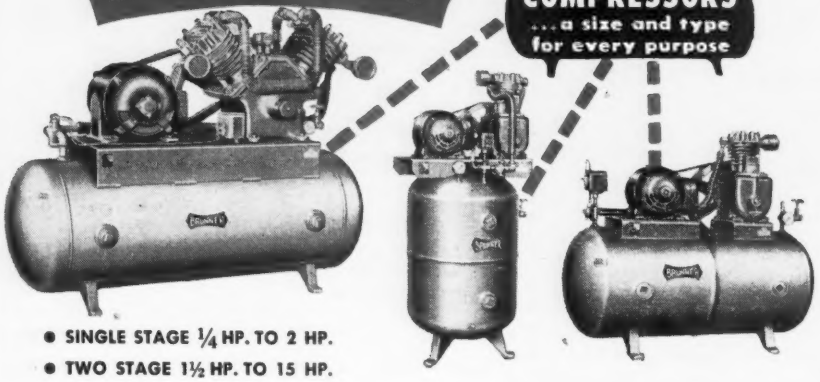
City and State

Now mail it to

BRUNNER MANUFACTURING COMPANY
UTICA 1, NEW YORK, U. S. A.

BRUNNER SINCE 1906

AIR COMPRESSORS . . . a size and type for every purpose



- SINGLE STAGE 1/4 HP. TO 2 HP.
- TWO STAGE 1½ HP. TO 15 HP.

How many income producing services would you have to abandon if you had no compressed air? Brunner Air Compressors are noted for their dependability and long service life.

287. Refinishers' Book

The Martin-Senour Company is publishing a thirty-six page illustrated booklet entitled "Guide to Better Automotive Refinishing." The book covers the complete field of automotive refinishing, from selecting the proper equipment to solving refinish problems. Included in the booklet is a reprint of the Martin-Senour "Strike a Match Tint Chart" for matching faded and weathered automotive finishes and eight full pages of Martin-Senour product information. In addition, solutions are given for such unusual problems as refinishing wood panel station wagons, refrigerators, and other appliances.

288. Tool Stand

Lyon Metal Products, Inc. is manufacturing a tool stand, 37 1/8 inches high, with three trays measuring 20 x 28 inches and 24 x 36 inches. The trays are all interchangeable and punched for attachment of drawers. The drawers have a padlock arrangement and a sliding tool tray. The drawer operates on ball bearing rollers.



289. Battery Jug

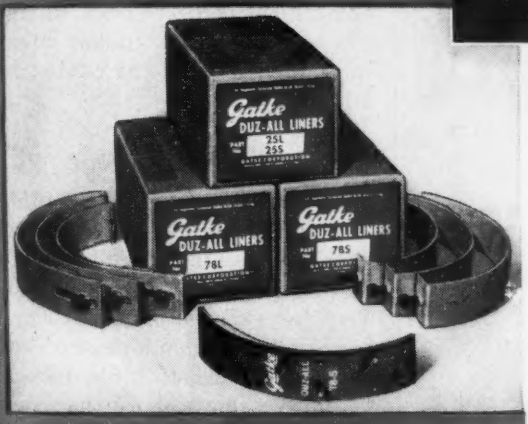
E. Edelmann and Company are marketing the No. 74C "Hippo" Battery Jug. The Hippo battery jug, like its namesake, uses a low center of gravity to maintain a firm footing. The jug is made with a seamless rubber body and holds

(Continued on page 138)

The Gatke DUZ-ALL System

Puts the RIGHT BRAKE LINING for ANY JOB at your Finger Tips





1. **REDUCES INVENTORY—**
   This midget stock provides reline coverage for any car or light truck—1176 Models since 1930—including all bonded jobs.
2. **STOPS OBSOLESCENCE LOSSES—**
   DUZ-ALL LINERS do not become obsolete.
3. **PROVIDES EXTRA PROFIT—**
   Especially on the higher rate reline jobs.
4. **RELINES BONDED JOBS AT FULL PROFIT—**
   Without costly specialized equipment.
5. **SAVES SHELF SPACE—**
   A complete coverage stock requires less than a cubic foot.
6. **SAVES TIME—**
   No costly pick ups. No delays. No searching.
7. **SPEEDS SERVICE—**
   Elaborate catalog references not required.

Ask your GATKE Jobber or write.

This DUZ-ALL DEAL Relines 1176 Models

of passenger cars and trucks from 1930 including all Bonded Jobs

GET IT FROM YOUR JOBBER

Gatke

A GREAT NAME IN BRAKE LINING

GATKE CORPORATION—Automotive Division
General Offices: 228 N. LaSalle St., Chicago 1, Ill.
Factories at Warsaw, Indiana and North Brookfield, Massachusetts

New Products . . . . . Continued from Page 136

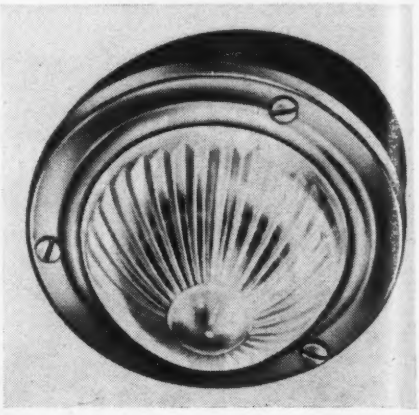
over four quarts of water. A 16 inch hose is attached.

290. Adhesives

Behr-Manning announces the release of nine new autobody adhesives and sealers under the trade name Behr-Cat Brand. The new cement line includes black weatherstrip adhesive, amber weatherstrip adhesive, trim cement, metal filler, body deadener, body caulking, clear glass sealer, body sealer, and felt pad adhesive.

291. Back-up Light

R. E. Dietz Company has recently announced the model #210 back up light as a new addition to the Dietz line of automotive safety lighting equipment. The Dietz back up lights are chrome finished and have a special clear, glass



behive type lens which is designed to focus a powerful beam of light to illuminate the area behind the vehicle. The Dietz back up light has soft, tapered rubber mounting pads which fit the contours of all cars.

292. AERA Booklet

Automotive Engine Rebuilders Association is now featuring a twenty page illustrated booklet entitled "Custom Machining Enables You to Offer Complete Engine Service." This machine shop catalog, which measures 8½ inches x 11 inches, shows more than thirty

(*Continued on page* 140)

Save this Can!



TO CONSERVE TIN and STEEL for National Defense

Your Help is Needed!

JOBBERS

Please hold the cans that are returned to you. A K&W representative will call and make the necessary arrangements for their return to the factory.

Return any lithographed K&W Metallic Seal can in good condition, to the jobber from whom it was purchased and you will be refunded 2 cents—or if you prefer we will contribute this amount to the Damon Runyon Cancer Fund.

Rinse the can with water immediately after use — replace cap. Do your part and help build the Damon Runyon Cancer Fund.

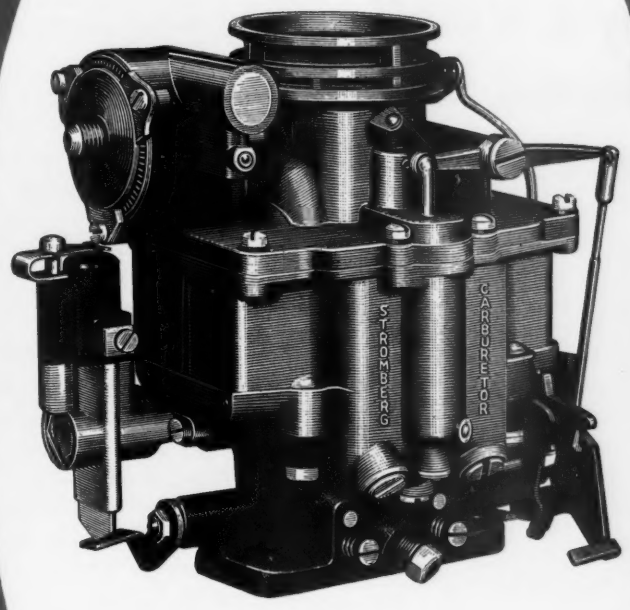
K&W Products, Inc.
WHITTIER, CALIFORNIA BLOOMINGTON, INDIANA



"No, he's not trying to get in, he's trying to get out!"

STROMBERG

For Performance that Builds Your Reputation as Well as Ours!



Bendix
AVIATION CORPORATION

Bendix SOUTH BEND
PRODUCTS DIVISION INDIANA
Standard Equipment Sales: Elmira, N. Y.

When you install a Stromberg* Carburetor, you are assuring your customer of carburetor performance *second to none*—performance that is bound to mean a smoother running car and important savings in gasoline dollars. These are results you can count on, because Stromberg quality is built in *right* from the start—with exclusive engineering features, scientific design and mechanical simplicity that make it easy to do a good job every time. And remember, Stromberg Carburetors last longer, too. *REG. U.S. PAT. OFF.

These Bendix signs stand for good business and for good business relations between factory, dealer and customer.

AUTHORIZED STROMBERG CARBURETORS SALES & SERVICE

Replacement Carburetors —Repair Kits

AUTHORIZED BENDIX BRAKES SALES & SERVICE

Original Equipment on most cars

SALES AND SERVICE Vacuum Bendix Power BX-HYDROVAC

Hydrovac* Power Brake —Trailer Power Braking Systems

BENDIX METAL clene PARTS CLEANER

Cold Immersion Parts Cleaner saves time and money

The Quality CARBURETOR

Canadian Sales: Bendix-Eclipse of Canada, Ltd., Windsor, Ontario, Canada • Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N.Y.

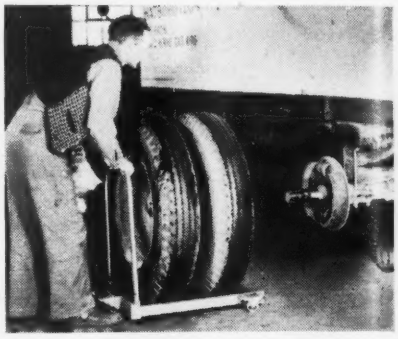
shop operations, identified by code, which enables the catalog to be used with the individual member's price sheet. The catalog is available to all A.E.R.A. members.

293. Ratchet Tool

Rinck-McIlwaine, Inc., is manufacturing a ratchet tool which adjusts instantly to any size to fit nuts or pipe. The jaws are said to always remain parallel and to extend to a full 2 inches. A double pivot provides the holding power on the jaws and ratchet. Nine size adjustments are available with this tool. The ratchet falls into place automatically and opens and sets instantly with one hand. The ratchet tool is forged of chrome vanadium steel.

294. Dual Dolly

Alexander-Tagg Industries, Inc. announce a dual wheel dolly with which dual truck wheels can be removed and replaced quickly. The dolly handles tire sizes from 6.50



to 11. It weighs 48 lbs, is 33 inches long, 21½ inches wide and the handle is 29 inches from the floor. Swivel casters provide accurate alignment, and by using two dollies, both sides of the truck can be serviced at the same time.

295. Parts Catalogue

The Weatherhead Company is making available a new catalog describing and illustrating a complete Weatherhead line of original equipment automotive parts. Included in thet 51 page publication are listings on tube fittings, drain and shut-off cocks, window lift hose and fittings, fuel lines, filter lines, brake fittings, brake hose and dash controls. Three full pages of interchangeable numbers are provided in the catalog, giving the car maker's part number and the corresponding Weatherhead part number.

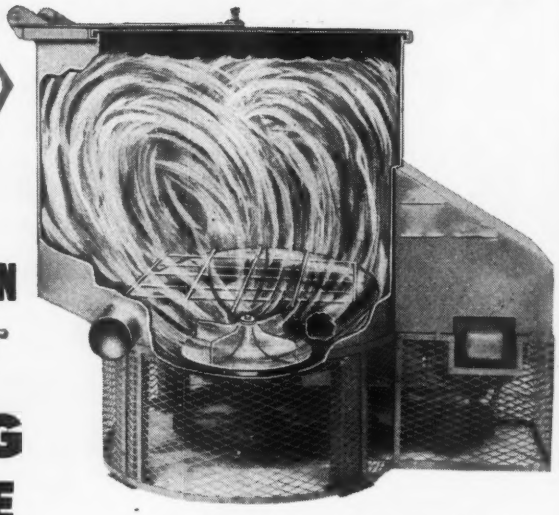
296. Dispenser

Stello Products Company is offering a new upper-cylinder dispenser of cad-plated steel with barrel of Pyrex Glass tubing for checking and measuring the fluid in the gun. The use of upper-cylinder oil dispenser allows the purchase of oil in bulk quantities and eliminates the use of the individual can. The gun draws oil from the bulk can through a draw tube

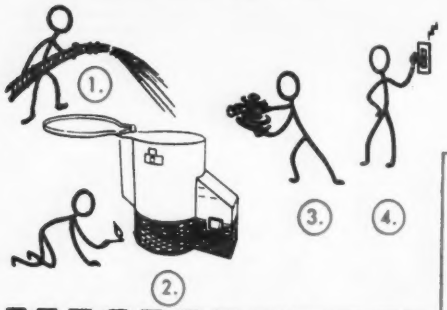
(*Continued on page* 142)

it's SENSATIONAL!
. . . The way it WASHES Motor Blocks and Parts

RELIEVES OPERATOR FOR OTHER JOBS WHILE IT CLEANS



STORM-VULCAN
TURBO BLAST
WASHING MACHINE





Here's how simply and easily this machine washes dirty, greasy motor blocks and parts:
(1) Fill tank — add detergent; (2) Light heater; (3) Put parts in tank; (4) Start impeller; (5) Take out clean parts.

Get complete details today

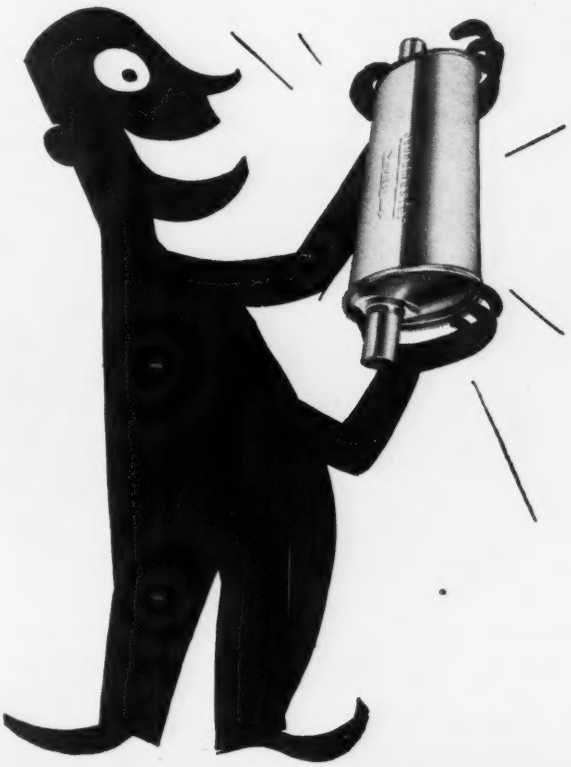
STORM-VULCAN, INC.
2504 Commerce, Dallas, Texas
Send full description of Turbo-Blast washing machine.
Firm Name_____
Address_____
City_____ State_____

STORM VULCAN
INCORPORATED
2504 COMMERCE ST., DALLAS, TEXAS

WHEN THE
MUFFLER GOES **BAD**



MAKE SURE THE
REPLACEMENT IS **GOOD**



INSTALL A

Soundmaster

MUFFLER

N·A·P·A
National Automotive Parts Association
Assurance of Quality

● When a new muffler is needed, install one that *fits* . . . one that will give the greatest *service.* Soundmaster is the quality line that gives the most of both. Soundmaster standards for noise control, endurance and low back pressure meet in full the most exacting requirements of each vehicle. And, above all, Soundmaster **FIT**—engineered for each particular car—means **F**ast **I**nstallation **T**ime . . . more profit for you!

DEKOVEN MANUFACTURING COMPANY • RACINE, WISCONSIN

New Products . . . . . Continued from Page 140

and check valve which is furnished with the gun. The check valve screws on a standard kerosene-type can.

297. Swivel Light

The Pyle National Company is producing a new overhead suspension under-side illuminator called the Anchorlite. This light is designed for a wide range of movement, and to swing free on a swivel when suspended on a stationary bracket. A spring loaded telescopic device provides up to three feet of expansion in length with a firm supporting tension. The anchoring arm can be pulled down under the car hood, fenders, bumpers or body and the light projected inside or under the support wherever it is most needed.

298. Degreasing Book

Phillips Manufacturing Company is publishing a 21 page handbook on vapor degreasing of metal parts. The handbook answers most questions generally asked about vapor degreasing, completely covering the subject of what vapor degreasing is and to what types of materials and manufacturing vapor degreasing can be applied.





"Oh, fine! I must call on you for help more often!"

299. Floor Merchandiser

The Alemite Division of Stewart-Warner Corporation has announced a new floor merchandiser for Alemite products. Designated as "Panels-O'-Profit," the display frame holds three panels that are mounted vertically on a tubular steel stand 55 inches high and 22 inches wide. The panels are interchangeable and can be shifted.

300. Luggage Carrier

Nash Motors announces a new type of top luggage carrier made for use with the Rambler convertible, station wagon and suburban models. Weighing approximately 33 pounds, the rack is installed or removed by turning four thumb screws. The frame is made of tubular steel, with hardwood slats mounted on channel iron cross bars. It is finished in dove grey, backed synthetic enamel, and the legs and fasteners are plastic-coated to prevent scratching body finish.

"Why I changed my serviceman"

By a Disgruntled Car Owner

"I had just had the old bus serviced—and we were off for a picnic at Silver Lake—happy as kids on circus day. There we were, driving down a lonely road—ten miles from a service station—when the fan belt went blooie! Our holiday was shot to Halifax. You ask me why I changed my serviceman?"



Was This One of Your Customers?

...or do you always replace the fan belt before it fails?

Do you check the fan belt every time you service a car? Do you make *sure* it won't let your customer down?

Remember, everything hangs on the fan belt—the cooling, ignition and lighting systems. You don't save your customer anything by postponing the replacement of his fan belt, because it's bound to break—and he will blame you.

Make your replacements with Thermoid Fan Belts. They are "a horse of a different color." Thermoid Fan Belts are pre-stretched to insure *lasting* fit. Belts that don't stretch, don't slip, and so they last longer—give more dependable service.

Thermoid Company • Trenton, New Jersey

Tell Your Customers These Facts About Fan Belts

A fan belt takes an awful beating from oil, grease, engine heat and just plain wear.

Automotive engineers advise playing safe by replacing fan belts every two years, or every 20,000 miles.

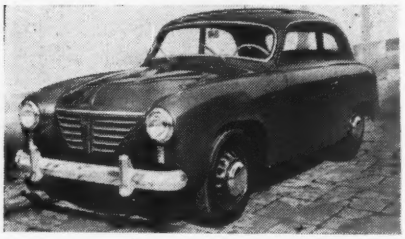


Thermoid

Brake Linings • Fan Belts • Radiator Hose • Hydraulic Brake Parts and Fluid • Car Mats • Clutch Facings • Thermoid Precision Process Equipment

Front Drive German Car

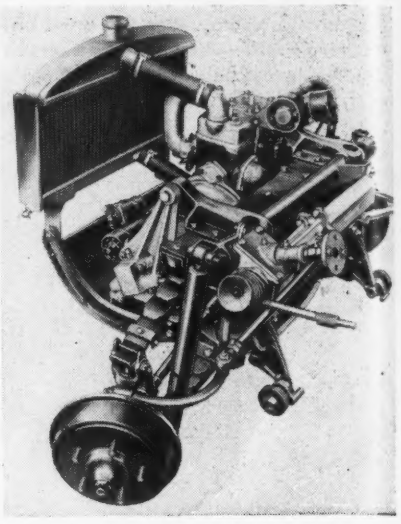
Two new models of the Goliath passenger car, a convertible and a

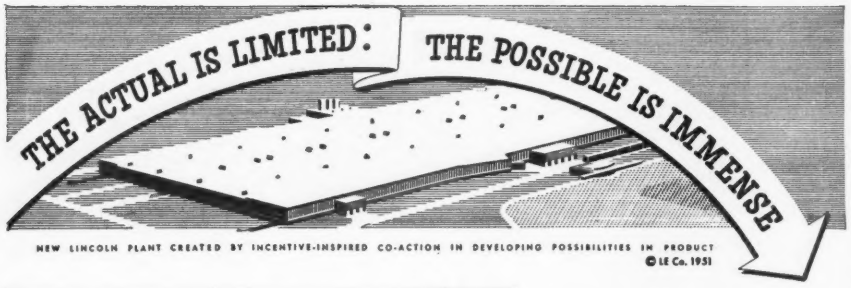


two-door sedan, have been announced by the Goliath Werk of Bremen, Germany. An interesting feature of the Goliath is the forward mounted front drive engine. The two cylinder power plan has a displacement of 42 cu. in., developing 24 hp. The car can travel 36 miles on a gallon of gas and has a top speed of 62.5 m.p.h.

The transmission has four forward speeds, the top speed acting as an overdrive and reverse. Fully hydraulic brakes are standard equipment with a mechanical parking brake on the rear wheels.

Suspension at the front is by two parallel, upper and lower transverse, semi-elliptical leaf springs, which allow the wheels to deflect independently. At the rear the suspension is to semi-elliptical leaf springs as in the standard construction. The Goliath sedan sells for 8690 German Marks or $3,069.





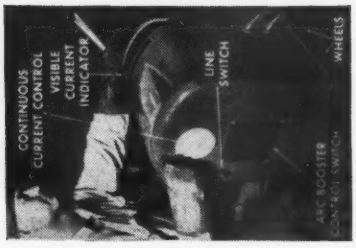
NEW LINCOLN PLANT CREATED BY INCENTIVE-INSPIRED CO-ACTION IN DEVELOPING POSSIBILITIES IN PRODUCT
© LE Co. 1951

DEPENDABLE, LOW-PRICED

"Fleetwelder" simplifies your welded repairs

- "Arc-Booster" Gives Easiest Welding . . . "Fleetwelder's" automatic arc striking with the unique "Arc-Booster" and its unusually stable arc allow even the beginner to make high quality, professional welds on heavy frames, axles or on light body work.
- Versatile. Handles a host of jobs . . . welds, cuts, solders, brazes and heats for bending all kinds of metals.
- Simple To Install. Operates on single phase power . . . has wheels for quick portability to any part of the shop.

Low In Price. *"Fleetwelder" 200 AC with famous "Arc-Booster," handles 3/64" to 1/4" rods. Built with Lincoln's world famous, industrial-type construction . . .* yet sells for less than other welders of comparable capacity.

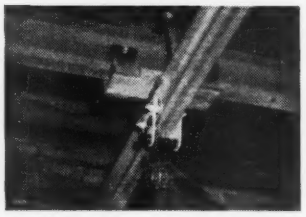


FAST REPAIRS



Repairs Cracked Rim *of heavy-duty truck wheel with Lincoln "Fleetwelder." Saves cost and delay of securing replacements.*

BUILDING EQUIPMENT



Handy Hoist *for speeding maintenance operations is fabricated easily from I-beams and using conventional chain lift.*

HERE'S EASY WELDING THAT REALLY CUTS COSTS

Full details on "Fleetwelder" 200 AC are available in free bulletin 1301. Write on your letterhead to Dept. 303,

THE LINCOLN ELECTRIC COMPANY
CLEVELAND 1, OHIO

Ford of Canada Surveys Production of Jeeps

Willys-Overland has concluded an agreement with the Canadian Government under which Ford of Canada will survey facilities in Canada for production of military jeeps. The purpose of the survey is to help the government decide whether it would be desirable or economical to approve production of jeeps to be used by the Canadian Military Forces. The study also will determine the extent of Willys cooperation in partial or complete production of the jeep in Canada.



Marshall R. Chambers has been appointed advertising manager for Kent-Moore Organization, Inc., J. D. Adair, president, announced recently.



CAPT. EASY Says:

HOSE REPLACEMENTS? IT'S EASY TO SERVE EVERY CUSTOMER EVERY TIME WITH WEATHERHEAD— THE ORIGINAL EQUIPMENT LINE!

You can handle *all* hose replacements with a few key assortments—everything from fuel and oil lines to window lift and folding top repairs. Weatherhead is EASY to stock, EASY to install, EASY to sell!



The H-128 Fuel Line assortment handles better than 4 out of 5 calls.

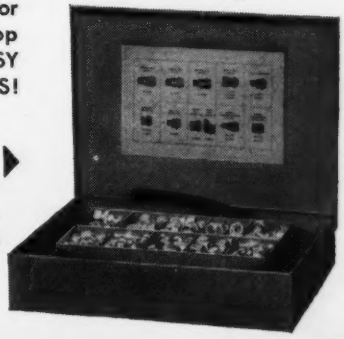


Hose and converter fittings combined in one handy wall rack make this H-214 Oil Filter Line Kit truly complete.



Here's the WL-101 Kit for window lift, folding top and similar needs. The EASY way to EXTRA PROFITS!

Emergency assortment H-222—a must for service stations, small garages, car dealers, fleet owners.



WRITE for completely illustrated Weatherhead catalog J-103-L, "Original Equipment Automotive Parts". Address: Dept. D, The Weatherhead Company, 300 East 131st St., Cleveland 8, Ohio.

The EASY line to handle is..

The Mark of Quality

WEATHERHEAD

ON EVERY CAR!

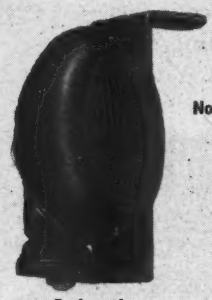


L-M Service Mgrs. Meeting

The first meeting of Lincoln-Mercury Division's newly-formed National Council of Dealers' Service Managers was held in Detroit recently with elected representatives from each of the Division's five sales regions in attendance. Shown here are delegates to one of the important sessions (left to right): Nelson Clark, Community Motors, Inc., Mt. Holly, N. J.; Jack Wolf, The F-H Company, Philadelphia; C. F. Laverty, Deaton Motor Co., Beverly Hills, Calif.; A. M. Smith, Dick Price Motors, Inc., Wichita, Kans.; E. D. Longenecker, national service manager, Lincoln-Mercury Division, Detroit; H. L. Polk, Bagby Hall Motor Co., Jackson, Miss.; C. J. Fournier, assistant national service manager, Lincoln-Mercury; F. Weideman, King Motors, Inc., Madison, Wisc.; C. Williams, Irv. Pollock, Inc., Toledo, O.; W. Rice, Wick Motors, Inc., Youngstown, Ohio; A. R. Raggio, Van Etta's, Santa Barbara, Calif.; and J. Burns, Turbiville Motor Co., Houston, Tex.

K-F Acquires Interest In Chase Aircraft

Kaiser-Frazer has acquired a 49 per cent stock interest in Chase Aircraft Co. Edgar Kaiser, president of K-F, will become president and chief executive officer of Chase Aircraft, and other changes will be made to bring about immediate expansion of the management. Michael Stroukoff, who has been president, will become executive vice president and chief engineer, in charge of research and development. A new board of directors will be elected, with three nominated by Stroukoff, three by Edgar Kaiser, and two outside directors. The Chase organization will be enlarged to expedite existing production engineering contracts with the Air Force. Chase Aircraft was founded by Stroukoff in New York City in February, 1943. It moved to Trenton, N. J., in late 1946 and began construction of an all metal glider. Later the company developed a twin engine troop and cargo carrying transport. Currently it is working on conversion of gliders to jet powered transports.


No. 212 — Fender or bracket mount

Red, amber or clear lens

A GOOD TURN DESERVES

TRUK Grote LINE

DIRECTION SIGNALS

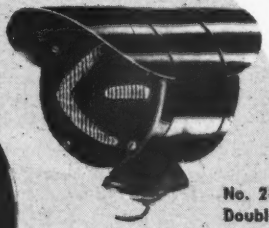

No. F-212
Flush panel mount

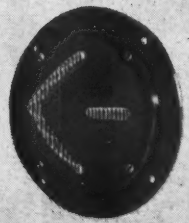
Compact and rugged construction, easily installed, positive and trouble-free operation. Self-cancelling —cannot interfere with steering or be thrown out of time. No relays to adjust or burn out. Pilot lamp is "light-out" warning. Most practical switch on the market.

H. D. TRUCK CONSTRUCTION


No. 240
Single face fender or frame mount




No. 240-D
Double faced front fender lamp


No. F-240
Flush panel mount

Switch and lamps are furnished in complete sets or as separate replacements. All lamps have long range lenses made of Grotelite shatterproofed plastic — for brighter warning, less replacement. Sets for bus, truck and truck-trailer combinations — all meet or surpass I.C.C. and S.A.E. specifications.

Lamps singly and in complete sets with flashers for all bus, truck and tractor-trailer combinations. Write for catalog.

THE GROTE MANUFACTURING COMPANY, INC.
BELLEVUE, KY. Established 1901

Gasket Right to insure Praise-Winning Jobs!



Follow these 4 approved procedures when REMOVING Cylinder Heads and CLEANING

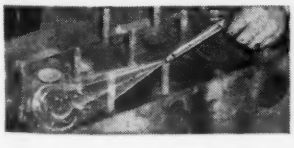
No. 1. Let Engine Cool Before Removing Head!

A simple precaution that is often overlooked—the engine should be allowed to cool before the cylinder head is removed. Removing a hot or warm cylinder head will usually result in warpage. A warped cylinder head will not "seat" properly and loss of compression, leakage and early gasket failure will result as shown in illustration above.



No. 2. Clean Head and Block Thoroughly!

Thorough cleaning of the cylinder head and block is important. All carbon deposits should be removed either by scraping or soaking in metal parts cleaner. Cylinder walls, piston heads, valves and bolt holes as well as inside of cylinder head should be blown off with an air hose. Blowing out the water jacket within the head will prevent particles from dropping on the gasket when the head is put in place. Dirt particles form pockets in the gaskets, allowing leakage and eventual gasket failure.



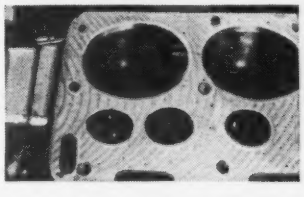
No. 3. Check for Warpage and Distortion!

Carefully check head for warpage and pitting and block for distortion, dents or pitting. Checking the head and block with a straight edge will show any warpage or distortion that has occurred. Pits in the head will show up at the water passages and around the combustion chambers. Surface irregularities must be remedied to insure proper gasket and engine performance.



No. 4. Do Not Remove Excess of Metal!

A word of caution—if head is to be refaced, care should be taken to remove no more metal than absolutely necessary. The compression ratio is rapidly increased as metal is removed. If it is evident that the head has been refaced several times, it should be replaced. Engines are not made to take radical increases in compression ratios without extensive rebuilding.



Always use new gaskets—*installing used gaskets is false economy that results in costly come-backs and loss of customer goodwill.*

Gasket Right with FEL-PRO Gaskets!

Fel-Pro's Famous FIT
Stops every "Little Drip"

B5499

CARS WILL RAVE ABOUT YOUR CAR

With Fel-Pro you can be sure you have the right gasket for the job. You can count on gaskets that match or excel original equipment in FIT—QUALITY and PERFORMANCE! Every Fel-Pro Gasket is thoroughly tested and proven—designed and engineered to give you Praise Winning Jobs every time.

FELT PRODUCTS MFG. CO., 1521 CARROLL AVENUE, CHICAGO 7, ILLINOIS
FAST SERVICE ASSURED By Warehouses Near You...ATLANTA, BOSTON, NEW YORK, LOS ANGELES, OAKLAND, PORTLAND.

Dept. Commerce Shows Record Increase in Motor Vehicles

Motor vehicles using the highways increased by 4½ million in 1950, an all-time record, according to the Bureau of Public Roads of the U. S. Department of Commerce. Total registrations, including publicly owned vehicles, climbed from 44,670,588 in 1949 to 49,143,275 last year. These figures are totals of registrations reported by State agencies.

The largest percentage increase (10.7 per cent) was in automobile registrations, which totaled 40,315,175 in 1950. Automobile registrations in 1949 were 36,433,674.

Truck registrations increased from 8,028,016 in 1949 to 8,604,448 last year, an increase of 7.2 per cent. Busses increased 7.1 per cent from 208,898 in 1949 to 223,652 last year.

Three States, Louisiana, New Mexico, and Texas, reported increases in total registrations of more than 15 per cent. Eleven States reported increases of more than 12 per cent. Seven States (California, New York, Pennsylvania, Texas, Ohio, Illinois, and Michigan) registered more than 2 million vehicles.

The trend in motor-vehicle travel on rural roads also continued upward in 1950, reaching a new all-time high. The Bureau of Public Roads reported an estimated total of 223 billion vehicle-miles of travel outside of cities last year, an increase of 8.7 per cent over 1949. In previous years travel on city streets has just about equaled that on rural roads. Total travel was probably close to 450 billion vehicle-miles.

In the first three months of 1951 travel on all rural roads has increased 8.4 per cent over that in the same period of 1950.

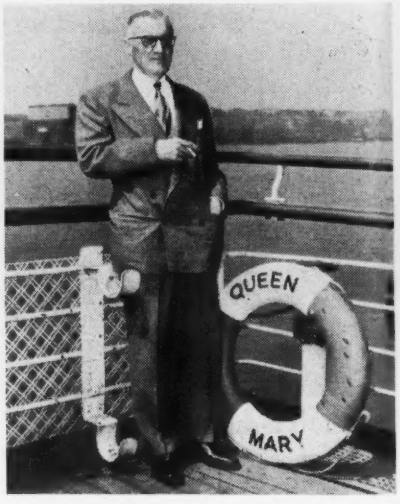


You multiply the tremendous sales advantage of Pennzoil motor oil, a leader by itself, when you sell Pennzoil Cha-Z-Lube, the exclusive, patented chassis lubricant, and Pennzoil Hydra-Flo, Type "A" automatic transmission fluid.

All three give you a triple shot at Pennzoil customers *who buy quality*. Find out about profit possibilities you can't afford to miss . . . and about the entire Pennzoil line of top quality lubricants for every purpose. Contact your nearest Pennzoil distributor, or write to us for his name.

SOUND YOUR Z
100% Pure Pennsylvania
PENNZOIL
Safe Lubrication

THE PENNZOIL COMPANY
Executive Offices
Oil City, Penna. • Los Angeles, Calif.



Joseph Dudley, vice president of the Austin Motor Company, Ltd. sailed recently for England after having completed a coast-to-coast survey of dealer needs in this country. He will confer with other top officials on the possibility of supplying the American demand for Austins in the face of Britain's curtailed steel supply.

Alabama Wholesalers Group Holds Annual Meeting

The Automotive Wholesalers Association of Alabama held their Thirteenth Annual meeting at the Hotel Jefferson Davis, Montgomery, Alabama, on April 15-16, 1951.

"carburetor jobs up 60%; bench time down 50%"



reports Al Gross
Al's Repair Shop
Philadelphia, Pa.



"My carburetor repair business has increased about 60% since I opened my Hygrade Rebuilding Department," says Mr. Gross. "When you give the customer a quality job, word gets around."



"By using the short-cuts in the Fingertip System, we have cut our carburetor rebuilding time in half," states Mr. Gross. "You can see why I like this Hygrade set-up so very much."



$69.75 complete!

Includes the priceless Hygrade Manual, assortment of 20 kits to repair all Chevvy, Plymouth, Ford carburetors; all the tools and equipment you need; cabinet; a continuing bulletin service; metal signs, outdoor banner, etc. (This outfit is worth over $100.00.)

By building a "rep" as a carburetor expert, you attract more carburetor jobs; more tune-ups too. And when you turn out a rebuilt yourself, you can stake your reputation on it because you know you replaced *all* the parts that wear with brand new parts. Find out how you can qualify as a full-fledged carburetor repair man and rebuilder in one-week's time, with the help of this revolutionary new system. Take the first step now. Write for more information. HYGRADE PRODUCTS DIVISION, Standard Motor Products, Inc., 35-35 Thirty-fifth Street, Long Island City 1, New York.

HYGRADE
FINGERTIP SYSTEM
OF CARBURETOR REBUILDING

by the makers of Blue Streak Ignition Products

CALENDAR OF COMING EVENTS

June 12—43rd annual banquet of Automobile Merchants Assn. of New York, Waldorf-Astoria Hotel, New York City.

June 28-July 1—Michigan Automobile Dealers Assn., Mackinac Island, Michigan.

July 8-10—Summer meeting of Automobile Trade Assn. Managers, Hotel Book-Cadillac, Detroit, Mich.

Aug. 13-15—Society of Automotive Engineers West Coast meeting, Olympic Hotel, Seattle, Washington.

Sept. 10-13—Society of Automotive Engineers, tractor and production forum, Schroeder Hotel, Milwaukee, Wisc.

Sept. 13-16—Federation of Automobile Dealers Assn. of Canada, Banff, Alta.

Sept. 16-18—28th Annual Convention New York State Auto Dealers Assn., Sagamore Hotel, Bolton Landing, Lake George, New York.

Sept. 16-18—Annual Convention of Kentucky Automobile Dealers Assn., Kentucky Lake, Gilbertsville, Kentucky.

Sept. 24-25—New Mexico Automobile Dealers Assn., Annual Conv., Murray Hotel, Silver City, N. M.

Sept. 25-26—National Truck Body Manufacturers and Distributors Assn. annual convention, Haddon Hall, Atlantic City, N. J.

Sept. 27-28—33rd Annual Convention, New Jersey Automobile Trade Assn., Hotel Traymore, Atlantic City, N. J.

Sept. 29, 30-Oct. 1—South Carolina Automobile Dealers Assn. convention, Ocean Forest Hotel, Myrtle Beach, S. C.

Sept 30-Oct. 1-2—Automobile Dealers Assn. of Alabama annual convention, Buena Vista Hotel, Biloxi, Miss.

Oct. 4-6—Pennsylvania Automobile Dealers Assn. annual convention, William Penn Hotel, Pittsburgh, Pa.

Oct. 5-7—Idaho Auto Dealers Assn. Convention, Sun Valley, Idaho.

Oct. 6-8—South Dakota Automobile Dealers Assn. 1951 annual convention, Mitchell, S. D.

Oct. 8-12—38th National Safety Congress and Exposition of National Safety Council, Chicago, Ill.

Oct. 14-16—Tennessee Automobile Assn. annual convention, Buena Vista Hotel, Biloxi, Miss.

Oct. 21-23—Florida Automobile Dealers Assn. 1951 annual convention, Tampa Terrace Hotel, Tampa, Fla.

Oct. 21-23—Georgia Automobile Dealers Assn., General Oglethorpe Hotel, Savannah, Ga.

Oct. 29-30—Annual convention, Ohio Automobile Dealers Assn., Dayton-Biltmore Hotel, Dayton, Ohio.

Oct. 29-30—Society of Automotive Engineers, diesel engine meeting, Drake Hotel, Chicago, Ill.

Oct. 29-31—Society of Automotive Engineers, transportation meeting, Knickerbocker Hotel, Chicago, Ill.

Oct. 31-Nov. 1—Society of Automotive Engineers, fuels and lubricants meeting, Drake Hotel, Chicago, Ill.

Nov. 3-6—Texas Automotive Dealers Assn., Shamrock Hotel, Houston, Tex.

Nov. 14-15—Annual meeting of Oklahoma Dealers Assn., Skirvin Hotel, Oklahoma City, Okla.

Nov. 27-29—Annual Convention of National Used Car Dealers Assn., Hotel Tampa Terrace, Tampa, Fla.

1952

Jan. 27-30—NADA convention, Waldorf-Astoria, New York City.

Feb. 28-Mar. 2—Pacific Automotive Show, Pan Pacific Auditorium, Los Angeles, Calif.



BURD Super Hi-Speed Piston Rings Correct Tough Cylinder Conditions with a wide-channel cast iron ring and ventilated expander, specially designed to assure uniform contact over the entire cylinder wall. Follow this with two steel segments positioned below the cast ring—for maximum wiping action without excessive wear—and you have the finest oil control ring money can buy.

BURD Valve Packing Stops Oil Leaks from Worn Stems and Guides because oil is kept *in* the guide—*out* of the firing chamber. A properly balanced combustion mixture with improved performance is likewise assured when oil and compression leaks are positively sealed with Burd Valve Packing. Easy to install. Easy to order. Get it today from your Burd products jobber.





Let Both BURD Products Work For You

Using both *Super Hi-Speed* Oil Rings and Burd Valve Packing is an installation practice followed by engine-wise mechanics. *Super Hi-Speeds* to stop oil pumping in tapered or out-of-round cylinders . . . Burd *Valve Packing* for that extra insurance against customer come-backs. Always use both Burd products—a great combination for oil control!

BURD PISTON RING CO. • ROCKFORD, ILL.



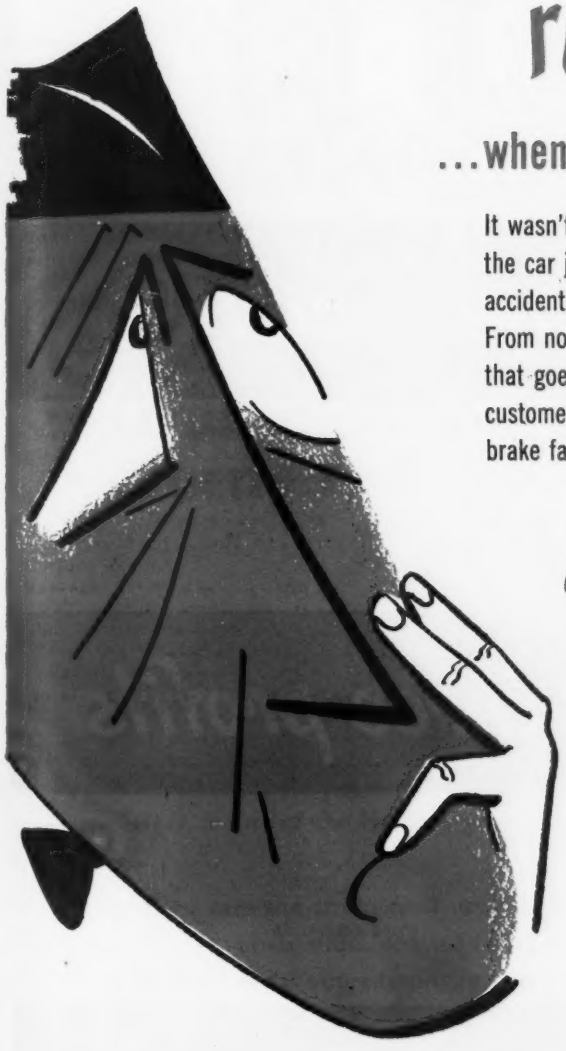


"He didn't have cash!"

was my face red



...when Bill Jones went through that red light!



It wasn't Bill's fault. He slammed on the brakes and nothing happened—the car just kept going. Lucky for him and me there wasn't a serious accident. But I had to do his brake job over and that taught me a lesson. From now on it's new parts in every vital spot on every repair job, and that goes double for new oil seals in brake re-lining jobs. I find that customers don't mind paying a few cents extra for this insurance against brake failure.

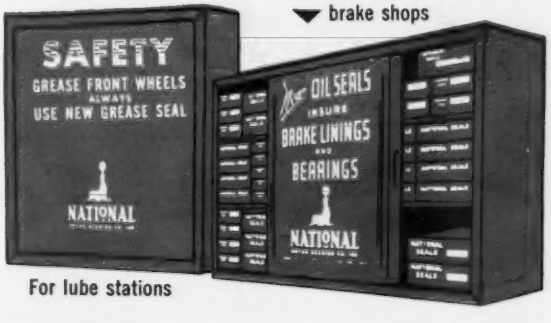
Install a new oil seal whenever you take one out!

—CAR MANUFACTURERS RECOMMEND IT



Handy cabinet at no cost with fast-selling assortment

For repair and brake shops ▼



For lube stations

Experience shows it is very difficult to remove an oil seal without damaging it beyond further safe use. Keep an assortment of National Oil Seals handy so you can put in a new seal every time you take one out. National has two assortments available; one contains front wheel seals only and the other both front and rear wheel seals for the most popular cars. Every seal is a fast selling number. You get the cabinet at no cost when you buy the initial assortment. See your jobber about it now.

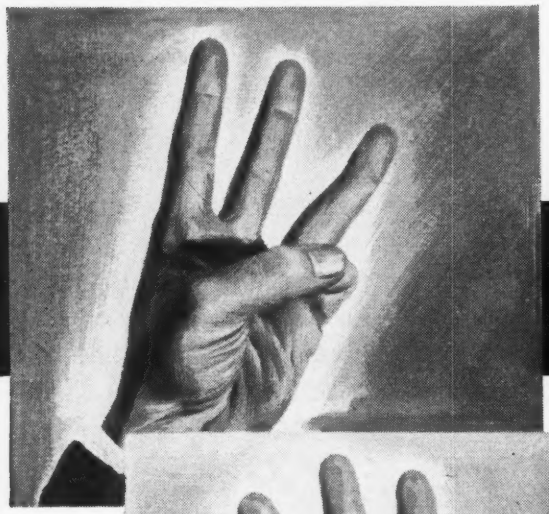
NATIONAL
OIL AND GREASE SEALS
APPROVED ORIGINAL EQUIPMENT FOR ALL CARS, TRUCKS, BUSSES AND TRACTORS

Support this industry-wide program...

NATIONAL MOTOR BEARING CO., INC.
General Offices: Redwood City, Calif.
Plants: Redwood City, Calif.; Van Wert, Ohio

2288

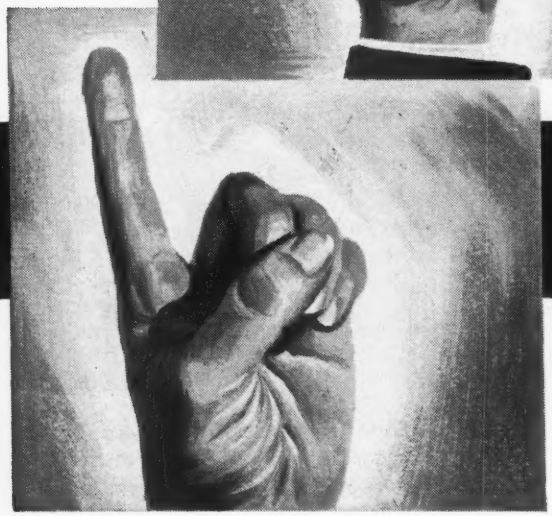
Why DODGE
TRIPLE PROFIT OPPORTUNITY MEANS FINANCIAL STABILITY!



Three lines



three profits



one overhead!

All available in one sales agreement
The only one of its kind in the industry

You are invited to write for the complete facts

DODGE • PLYMOUTH • DODGE *"Job-Rated"* TRUCKS

DODGE DIVISION, CHRYSLER CORPORATION • 7900 JOS. CAMPAU, DETROIT 31, MICHIGAN

Modac's *Big* F.B.I.* *campaign*

(* FAN BELT INSPECTION)

WILL UNCOVER HIDDEN PROFITS FOR YOU!



Conserve cars, protect users, build sales and profits for yourself!

Make your place F.B.I. Headquarters . . . with Modac's really different double-barreled campaign that makes fan belt inspection, *and replacement,* a part of the Nation's program of conserving all vehicles!

Two out of three cars and trucks need new fan belts TODAY! They'll stall, break down, suffer serious damage without them. And that's the smart dealer's opportunity to serve... sell... *profit!*

Modac offers you a wealth of colorful promotion material that *catches* the driver's eye, *stimulates* his interest, gets hoods up for fan belt *inspection,* gives sound, strong, "reason-why" pointers that make REPLACEMENT SALES!

Get in on this one while it's red-hot. Profit while you serve. Write or call your nearest N.A.P.A. Jobber!

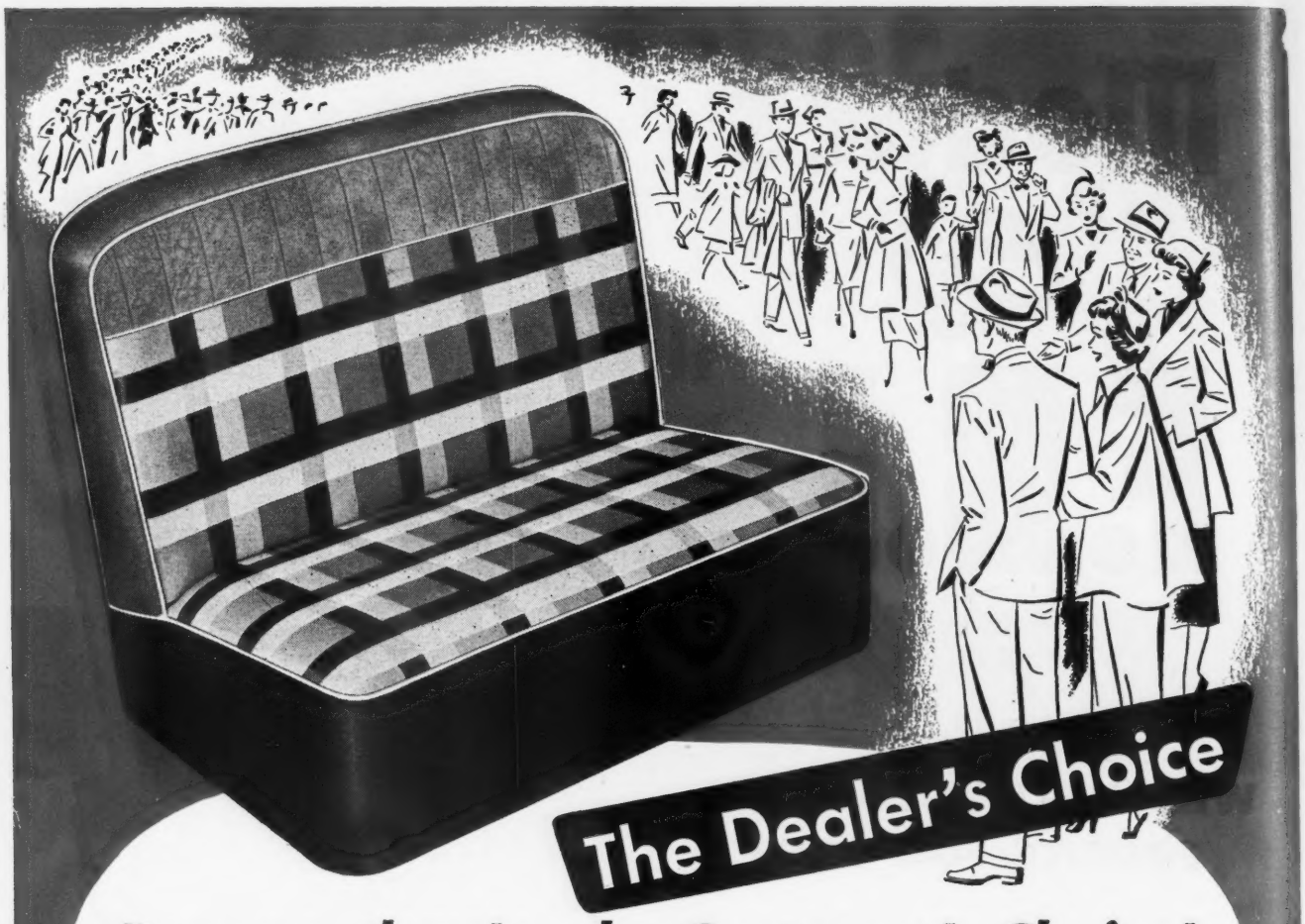
Modac

N·A·P·A National Automotive Parts Association *Assurance of Quality*

DEALERS!
Get this helpful material FREE!

- Colorful window poster
- Employee badge
- Deputies Report Form
- Mystic Disc
- Descriptive Broadside

HAYWOOD INDUSTRIES, WAYNESVILLE, N. C.



Because they're the Customer's Choice!

Howard Zink

AUTO SEAT COVERS

as advertised in . . .

THE SATURDAY EVENING POST AND HOLIDAY

Thousands of dealers from one end of the country to the other are selling Howard Zink Seat Covers and making a very good thing of it.

For here's the top seat cover line in America —tops in quality, tops in variety and above all tops in popularity. Consistent full-color advertising in the SATURDAY EVENING POST and HOLIDAY is making people ask for Howard Zink covers—not only ask for them but *insist* on them. Are you cashing in?

Our Representative Will Tell You The Full Story.
Write Us And We Will Have Him Call On You.

Howard Zink

World's largest manufacturers of auto seat covers

THE HOWARD ZINK CORPORATION • Fremont, Ohio • Passaic, N.J. • Long Beach, Calif. • Charleston, Miss.

Commercial Credit's AEP helps you make more money!

AUTOMOTIVE EQUIPMENT PLAN



Figure out what shop equipment you need...



Find out from your jobber how you can get it with AEP



Order and install it NOW—pay for it LATER— with Commercial Credit's AEP



Cash in on the bigger jobs and EXTRA profits you get with a modern shop!

Yes, sir . . . it's just as easy as that! Ask your jobber today about COMMERCIAL CREDIT'S AEP . . . the easy-pay plan that enables you to dress up your shop with modern, labor-saving, profit-making equipment. A reasonable down payment is all you need. You repay balance to us monthly out of extra profits.

Car repair business is going to grow fast in months ahead. Make the most of it! Let your customers know your shop is modern and progressive . . . get a reputation for first-class work done in an up-to-date shop . . . and you'll find yourself getting bigger jobs and more of them.

Call your jobber NOW and ask him to explain AEP . . . get your equipment while it's still available . . . and let it pay for itself out of the extra profits it earns for you!

BUY IT ON TIME!

ASK YOUR JOBBER ABOUT AEP

ONE CONTRACT • ONE COST • INSURANCE INCLUDED

THE BEST EQUIPPED SHOP GETS THE PROFITABLE BUSINESS!

COMMERCIAL CREDIT CORPORATION

A subsidiary of Commercial Credit Company, Baltimore... Capital and Surplus over $100,000,000...*more than 300 offices in principal cities of the United States and Canada.*



SO EASY TO USE... IT'S A CINCH TO SELL!

SAGINAW RECIRCULATING-BALL BUMPER JACK

You'll make more sales and step up profits by keeping a Saginaw Recirculating-Ball Bumper Jack out where your customers will see it . . . ask about it . . . try it. It's the bumper jack *everyone* wants.

This is the sensational jack that *rolls* the car up—quickly, easily, safely. It's the sturdiest bumper jack ever made, and it fits every car in use today. It's exactly what drivers need for the years ahead.

OPERATES ON A TIME-PROVED PRINCIPLE. The Saginaw Recirculating-Ball principle has been tested and proved in over a quarter-million bumper jacks, and in millions of steering gears on automobiles and trucks. Car owners *recognize* its value.

REQUIRES NO MUSCLE TO OPERATE. This bumper jack rolls the car up so easily and safely that even a child could operate it. Ideal for the *woman* driver.

BUILT FOR YEARS AND YEARS OF SERVICE. No fluid to leak . . . nothing to get out of order. Not affected by the weather; requires no up-keep. The sturdy rolled-steel shaft turns within a strong pressed-steel column, so the entire unit supports the car weight. Base is easily removed for storing. Specially designed brake prevents handle from spinning while car is lowered.

UNITED SERVICE MOTORS

SAGINAW BUMPER JACKS
A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

Saginaw

STEERING GEAR DIVISION
General Motors Corporation, Saginaw, Michigan

SSG PRODUCTS

STEERING GEARS AND LINKAGES • PROPELLER SHAFTS • TRANSMISSION CONTROLS • TURN SIGNALS • DIESEL ENGINE PARTS • BALL BEARING SCREW AND NUT ASSEMBLIES • AUTOMOBILE JACKS

Protect the finish from the inside out



MARTIN-SENOUR UNDERCOATS

prevent finish coats from sinking in

Important feature!... but only one of many you can count on with Martin-Senour Undercoats. Good filling qualities, greater flexibility, tougher and more durable ... plus:

Perfect adhesion—to bare metal or old finish.

Quick drying—jobs ready for sanding in shorter time.

Easy sanding—perfect feather edging.

Three types—All shop-proved for best results, all easier to use ...

P-S-G Cotes—lacquer base to prime and seal over old lacquer and enamel finishes and provide proper ground coat for lacquer or enamel.

Lacquer Primer-Surfacers—combination primer-surfacer for use over either clean bare metal or old paint surfaces.

6252—light gray
6255—dark gray
6256—red oxide

Synthol Primers—to prime over sheet steel or any previously painted surface. For fleet work and quality used-car refinishing.

8093—white
8094—gray
8095—dark red

Your N.A.P.A. Jobber has them now!

MARTIN-SENOUR

2520 South Quarry Street, Chicago 8, Illinois

METALPREP

banishes auto paint enemies with 1 operation.

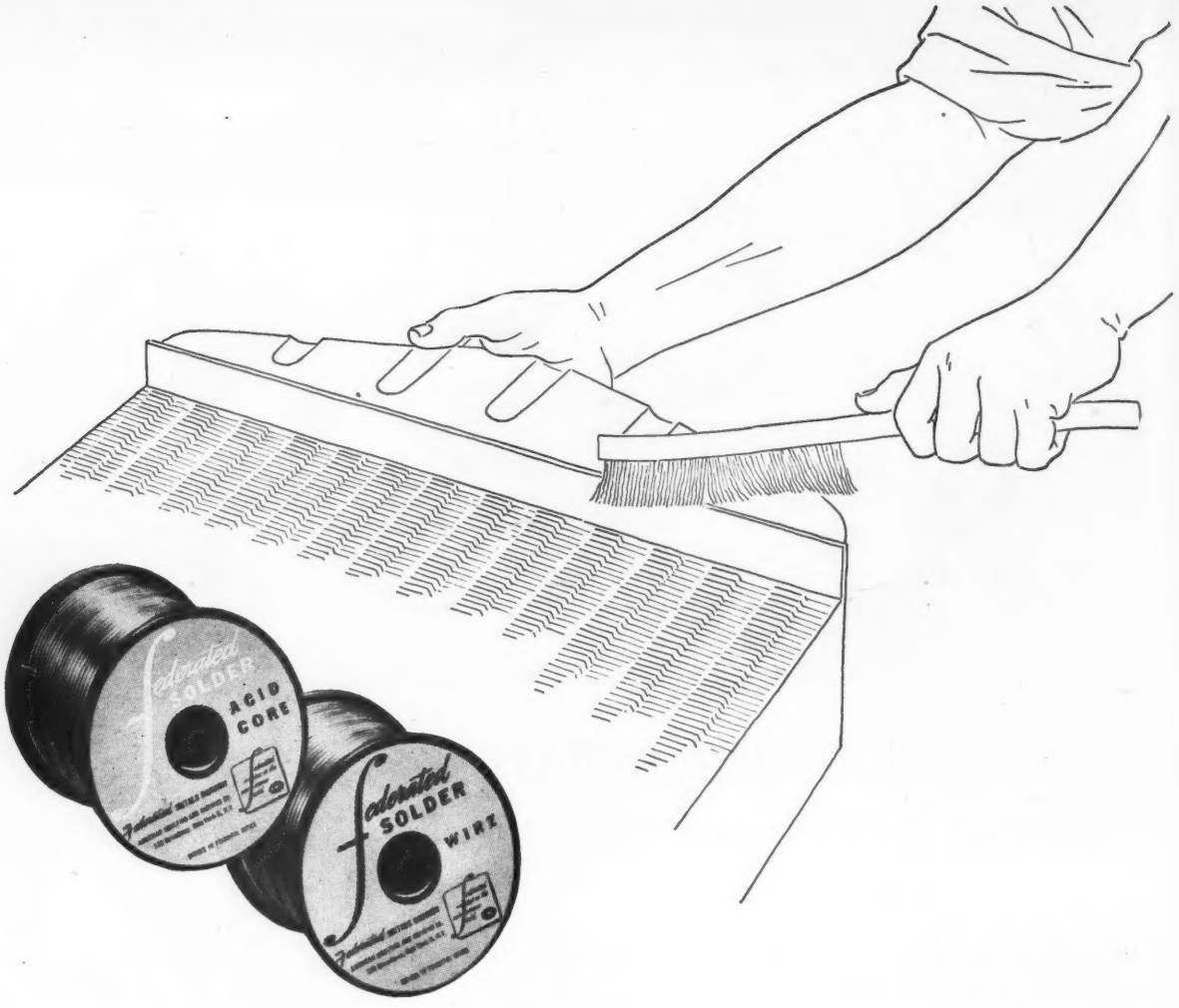
Assures a good job every time

• Removes grease and rust • Destroys rusting agents • Etches the metal • Neutralizes handmarks • Prevents rust action under paint • Non-toxic. Will not burn • Creates a firm and lasting bond for paint finishes



Available through your N.A.P.A. Jobber

Factory Packaging ... is the only positive control from Factory to Finisher



HOW TO SOLDER BETTER...AND SAVE METAL!

Make the joint tight and permanent *the first time* by using the right solder and the right method of soldering.

HOW TO USE . . .

Always be sure to clean *thoroughly* the surfaces to be soldered. Remove all traces of paint, grease, rust, or other metallic oxides. Use an abrasive such as sandpaper, steel wool, a file, or a wire brush to clean well. Solder sticks best to the bare metal.

WHAT TO USE . . .

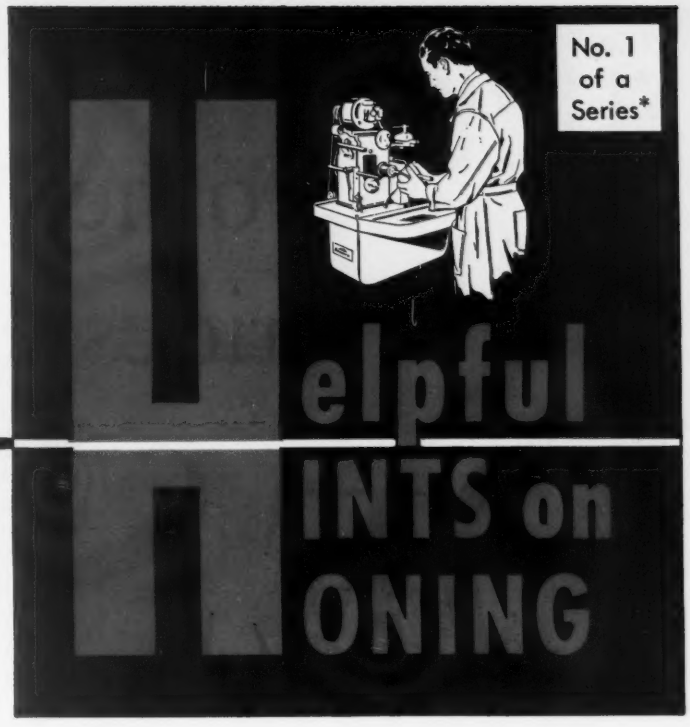
The solder you use may prove to be the difference between a job's success or failure . . . between having to do it once, or over and over again. *To be sure*, use the best solder . . . Federated Solder.

Federated® Solder is available in all commercial sizes, compositions and wire dimensions. Analysis of solder prominently displayed on box. Listed by Underwriters' Laboratories Inc.

Federated Metals Division

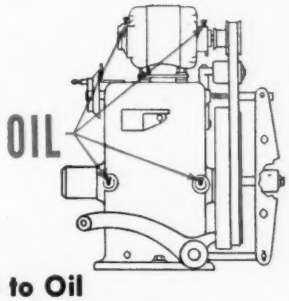
Federated first in the new renewed field FMD

AMERICAN SMELTING AND REFINING COMPANY • 120 BROADWAY, NEW YORK 5, N. Y.



Some Pointers on How to Keep Your SUNNEN Honing Machine in Tip-Top Condition...

- *To Give You Better Service*
- *At Lowest Cost*



Be Sure to Oil

your Sunnen Honing Machine regularly. See your instruction book for details.



Adjust Belt Tension

if needed. Brake should release just an instant before power is applied to the spindle. Keep belt tight enough to prevent slipping and loss of power. Keep belt free of grease and oil. Replace belt if frayed or worn.

*This series of advertisements is designed to help users of Sunnen equipment conserve materials and manpower.

Keep Machine Clean

Protect it from grime and grit when not in use. Remove greasy dirt and lint from brake pad and inside of pulley, so that brake will work right. Keep pin fitting gage free of dirt and dust.

General cleanliness is excellent preventive maintenance. It pays off every time in longer machine life, better performance, lower upkeep. You'll find many other money-saving tips on your Sunnen equipment in your free copy of "Sunnen Service Hints." Get it through your Sunnen jobber — or write direct.



-608

Sunnen Products:

Bushing Grinders • Cylinder Grinders • Crankshaft Grinders • Bearing Sizers • Rod Aligners • Service Tools

SUNNEN PRODUCTS COMPANY

7918 Manchester Ave., St. Louis 17, Missouri • Canadian Factory: Chatham, Ontario



No other car rides like a DESOTO

CHAIR HIGH SEATS

NOT THIS



OR THIS

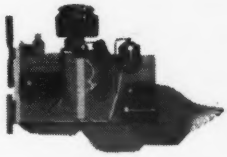


BUT THIS



It's built to tame rough roads (*new Oriflow shock absorbers!*). It's built to relax in (*more room!*). It's built to see out of (*bigger glass area and chair-high seats!*). It's built for easy driving (*no shifting!*). And it's an eye-opener for high value and low upkeep!

MORE POWERFUL HIGH COMPRESSION ENGINE



AMAZING NEW ORIFLOW SHOCK ABSORBERS

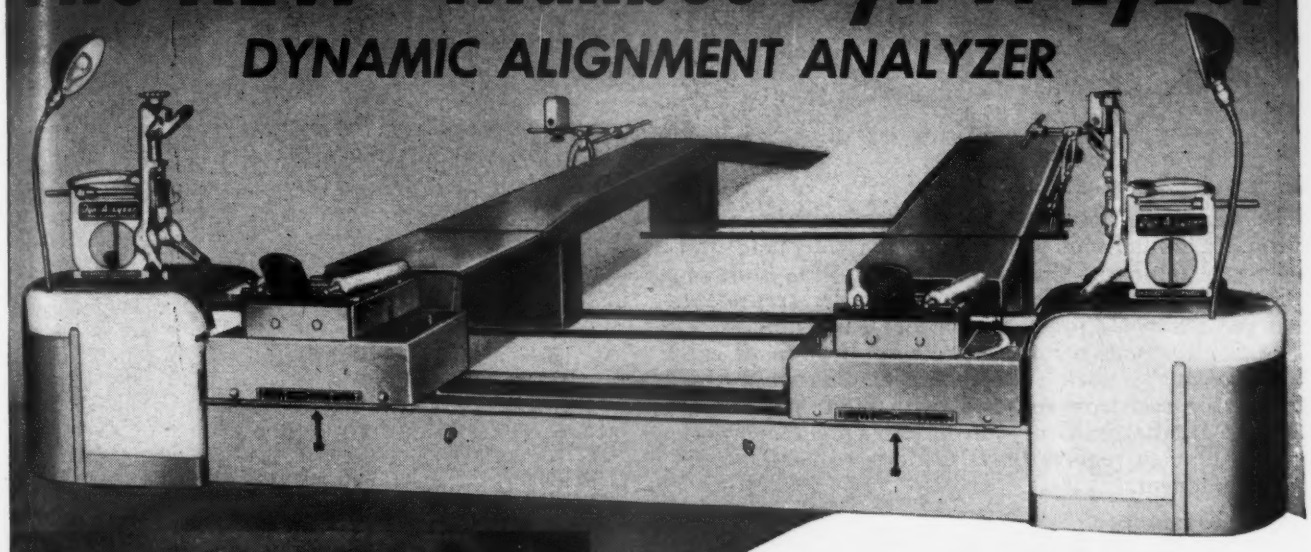


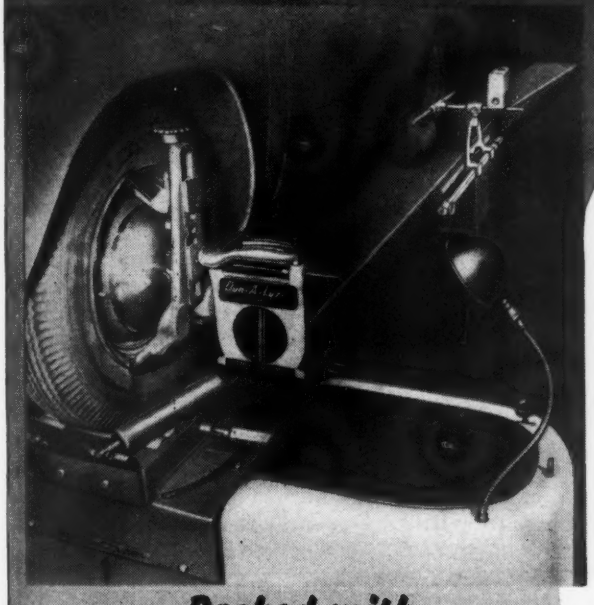
DE SOTO DIVISION, CHRYSLER CORPORATION



The NEW—Manbee Dyn-A-Lyzer

DYNAMIC ALIGNMENT ANALYZER





The ULTIMATE in 4-Wheel Alignment

Dynamic Alignment Analysis with the wheels power-driven under load. No guesswork. The measurements show the true alignment of the wheels when the car is driven. Car manufacturers have spent years and tremendous sums of money to produce similar results in laboratories.

Center-point Steering Correction based on proper tracking of all four wheels. There's nothing like it.

Direct Reading of Alignment Measurements under driving conditions. Nothing hidden. Nothing mysterious. No wonder car owners drive long distances to have their cars Dyn-A-Lyzed.

Packed with NEW Exclusive Features

- *POWER OPERATED* — Measures alignment with wheels power driven under load in true driving position.
- *ACCURATE* — Spirit Level Gauges give direct readings with correction for rim runout, yet automatically indicate rim runout in degrees.
- *SIMPLE* — Direct Reading Gauges with greatly magnified scales. *No figuring.*
- *COMPLETE* — Checks both tracking and camber of rear wheels.
- *THOROUGH* — Checks Center-point Steering based on proper tracking of all four wheels.
- *FAST* — Checks Caster, King Pin Inclination and Turning Radius in the same operation.
- *DEPENDABLE* — Combines the basic accuracy of Manbee Spirit Level Gauges with power operation. *No hidden adjustments to maintain.*
- *BUILT FOR KEEPS* — Made extra heavy throughout to stay right under service conditions.

What Dyn-A-Lyzer owners say—

"It's the smoothest, fastest, most accurate and the most convincing alignment analysis I've ever seen."

"The Dyn-A-Lyzer is perfect. We are using it for a lot of work with excellent results and no "comeback" work."

DON'T OVERLOOK THIS ONE! The first Dyn-A-Lyzer in any area will be owned by a LEADER. Ask your MANBEE Jobber or send for complete information.

MANBEE EQUIPMENT DIVISION
185-A North Wabash Ave., Chicago 1, Ill.

Please send complete information about the New Dyn-A-Lyzer.

Name_____ Title_____

Company_____

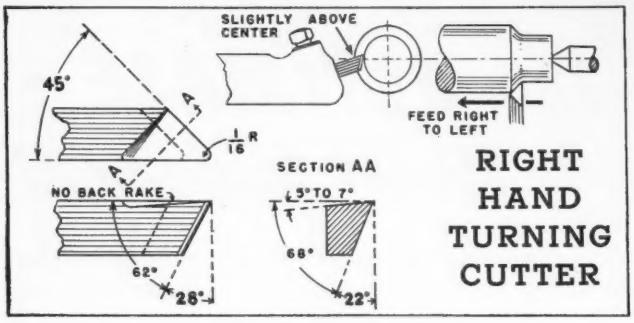
Street_____

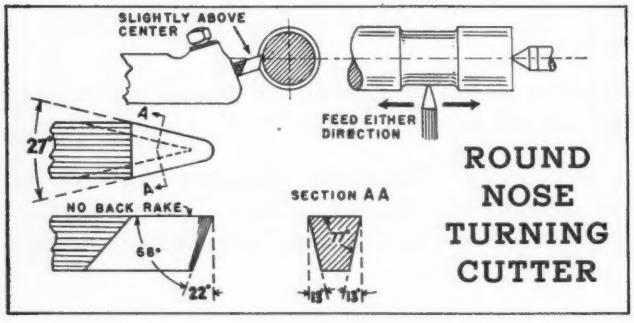
City_____ Zone_____ State_____

Memo to mechanics

How to do it right with WILLIAMS TURNING TOOLS

The prime requisites of efficient metal turning are a properly ground tool, well supported, rigidly held, and correctly applied to the work. The following hints on the use of Williams Turning Tool Holders represent our recommended practice for general machine work. The two diagrams below illustrate application of cutting tool to the work and proper grinding angles for machining cast iron and steel with high speed steel cutters. If, after grinding, cutting edges are honed with an oil stone to remove burrs the bits will cut better and last longer.



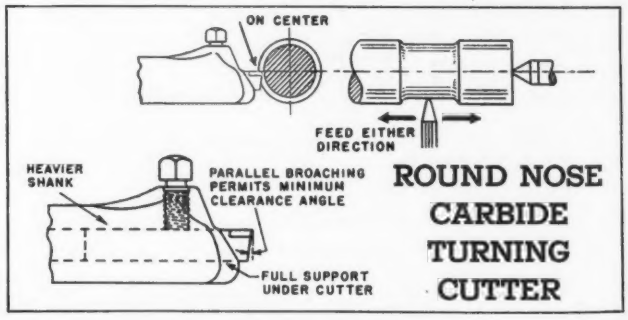


For turning brass and bronze, a round nose cutter... similar to the one illustrated above... is usually used. Brass cutting tools should be set at exact center of work... not above... and should be ground with a 15° negative back rake so that the top of the cutter will be flat when inserted in the Tool Holder (which has the cutter channel broached at 15°).



Carbide Turning Tool Holders

Since Tungsten Carbide Cutters are extremely brittle, it is essential that the cutter bit be held very rigid and the cutting edge supported as much as possible. Williams offer a Carbide Holder of heavier and longer design than the Regular Tool Holders of equal cutter capacity previously described. The cutter channel is broached parallel with the base of the shank rather than at the usual 15° angle. The parallel broaching of the cutter slot permits proper grinding of the cutter so as to give maximum support to the cutting edge. Williams Carbide Cutter Bits are ground ready for general use.



Copies of this and other "Memos to Mechanics" are available free upon request.

OPEN END, BOX, ADJUSTABLE & RATCHET WRENCHES; DETACHABLE SOCKETS & SETS; IMPACT SOCKETS; TOOL HOLDERS; LATHE DOGS; "C" CLAMPS; CHAIN PIPE TONGS & VISES; FLANGE JACKS; PLIERS; SCREWDRIVERS; PUNCHES & CHISELS; SOFT FACED HAMMERS; HOIST HOOKS; EYE BOLTS; ROD ENDS; CRANK & BALANCE HANDLES; THUMB SCREWS & NUTS; BODY & FENDER TOOLS.

WILLIAMS

• OUR DISTRIBUTOR IS YOUR LOCAL WAREHOUSE

J. H. WILLIAMS & CO., BUFFALO 7, N. Y. *Distributors Everywhere*

FUMBLING ELIMINATED IN 1910



Motorists of this period were delighted with a new invention, the "one man top." Previously, two people and much awkward fumbling were required to fold "old fashioned" tops.

—from Floyd Clymer's Historical Motor Scrapbooks

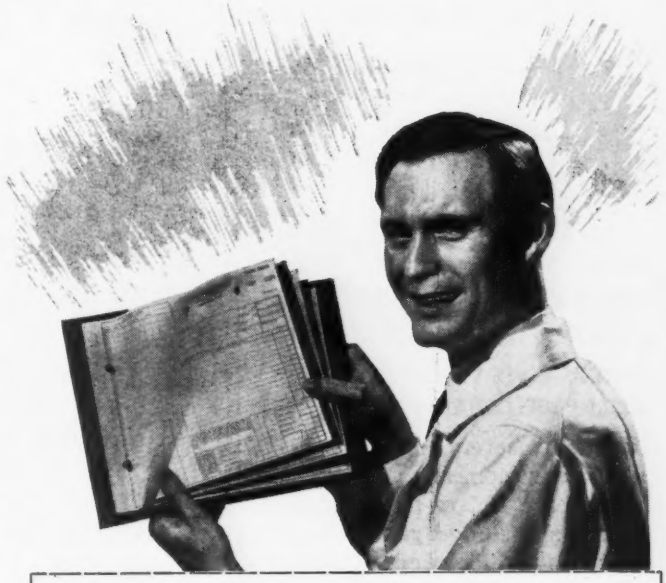
NOW... *dealers eliminate carbon paper fumbling with* CARBON INTERLEAVED REPAIR ORDERS!

Eliminate costly carbon paper fumbling in your service, parts, and accounting departments by putting Reynolds & Reynolds convenient Carbon Interleaved Repair Orders to work for you.

Each set is an individual, compact unit, complete with fresh carbons that insure legible, easy-to-read copies. The carbons are factory inserted . . . you lose no costly time slipping them into place. No wasteful jogging. No clumsy machines. With Carbon Interleaved Repair Orders, you're ready to write immediately!

And what a relief during rush periods! Your Service Salesman can jot down essential information and hurry to the next waiting customer . . . the sets stay intact so that routine information such as make, model, mileage, etc. can be filled in later.

Make the change now! Switch to Carbon Interleaved Repair Orders. They pay for themselves in time saved. You'll increase efficiency, reduce errors, and give your customers quicker service. For samples and more information, mail the coupon today!



. . . one of the several hundred sales aids and operating systems that build and protect your profits, produced by Reynolds & Reynolds

1866 R&R

The Reynolds & Reynolds Company
Celina, Ohio

Please send me samples and information on Reynolds & Reynolds Carbon Interleaved Repair Orders.

*Name*_____

*Firm Name*_____

*Address*_____

*City*_____ *State*_____

The REYNOLDS & REYNOLDS *Company*

CELINA, OHIO

OFFICES IN PRINCIPAL CITIES

WESTERN BRANCH: 3044 RIVERSIDE DRIVE, LOS ANGELES

ADD THIS PRODUCT



EVERY OIL CHANGE



FOR MORE PROFIT



NO MORE WORK

WYNN'S GIVES YOU AN EXTRA 35¢* CLEAR PROFIT ON EVERY OIL CHANGE

Try this on every oil change job: Tell your customers Wynn's boosts gas mileage 10% or more, reduces carbon and sludge, gives engines more power, less wear. Takes a minute to sell — means 35¢ extra profit for you — simply for opening a can of Wynn's. Best of all, Wynn's nails down repeat business. Once a customer has tried it, he'll be back for more Wynn's every 1000 miles.

**Based on national average profit.*

WYNN'S FRICTION PROOFING OIL

P.S. Clear an extra 38¢ by adding Wynn's on every T&D job, too.

Wynn's Friction Proofing Oil • Azusa, Calif.

K-F Starts Production Of Cargo Plane Parts

Kaiser-Frazer will start production of aircraft sub assemblies in June for the cargo plane it will build at Willow Run late this year. The plant was closed down for ten days in May to prepare for the start of aircraft production. Production of cars, however, has been resumed, and will be continued along with aircraft parts output. About 1000 employes are working on preparing the plant and the hundreds of machine tools that will be required are being installed at about 50 a week. KF will use about a million sq. ft. of the plant area for aircraft production. Relocation and concentration of automobile facilities have required moving of large spray booths and ovens and relocating 7080 ft. of floor conveyors, 6200 ft. of floor track, two trim lines, totalling 3800 ft. and two 120-ft. carrousel conveyors.

MOTOR AGE

The Quality Magazine of the Automotive After-Market

PORTABLE GARAGE

RETAIL PRICE $12.00 ea.



Extra Heavy Gauge

USE IT ANYWHERE!

• Goes wherever the car goes. • Folds compactly. • Takes little room. • Protects cars against the elements. • Keeps rain, snow, dust, salt air, sun or sleet away and protects the car's finish. • Durably constructed of clear transparent—heavy gauge vinyl plastic that is long wearing and tough. • Springtite elasticized bottom, holds securely in all kinds of weather. • Fits all makes and models.

NATIONALLY ADVERTISED TO CREATE THE DEMAND FOR YOU!

Dozen Lots	$7.20 each
6 Pieces	8.15 each
3 Pieces	8.90 each

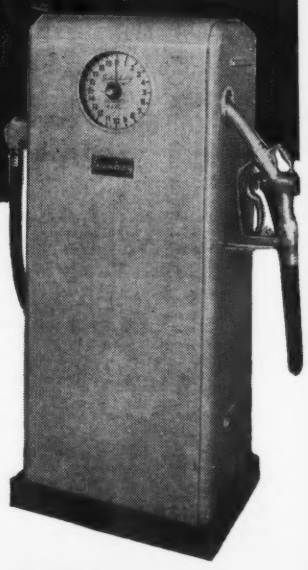
Sample orders are shipped at a cost of $12.00. Credit will be given for difference in cost against first order for 3 pieces or more.

DOMAR SALES CO., 480 Lexington Ave.
DEPT. W-3 NEW YORK 17, N. Y.

SAVES TIME! SAVES MONEY! SAVES LABOR!

Gasboy CONSUMER ELECTRIC PUMPS

UNDERWRITERS APPROVED



The 10 GPM Series 15 Gasboy

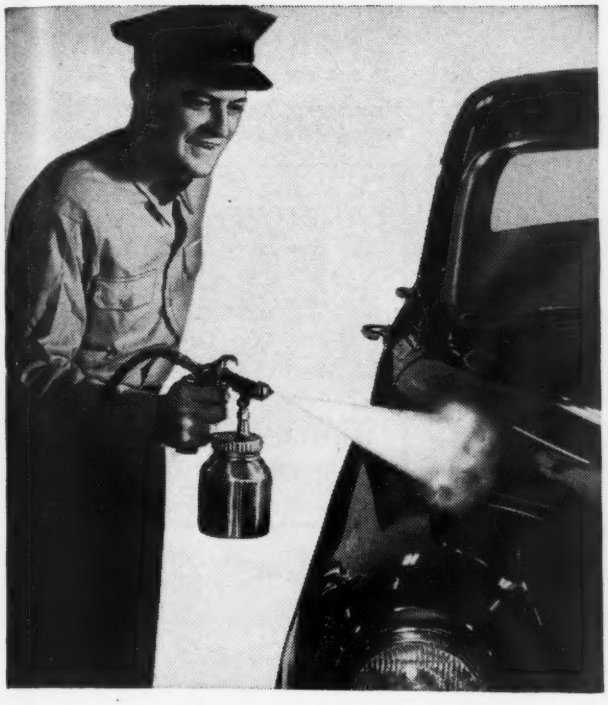
A spectacular low-priced consumer electric pump combining all the beauty and convenience of high-priced commercial types. This newest of Gasboy electrics is perfectly suited where pump speeds of 10 GPM are ample.

SEND FOR COMPLETE INFORMATION AND PRICES

MODEL 1550

WM. M. WILSON'S SONS, INC.
MANUFACTURERS OF GASBOYS, KERO-BOYS, OILBOYS, ROTABOYS
GENERAL OFFICES AND PLANT AT LANSDALE, PA.

Easier to apply than wax... makes you bigger profits



DU PONT *Spray Glaze*

new beauty process for cars

OUTSHINES THE BEST WAX JOB... YET TAKES LESS TIME AND LABOR TO APPLY

WHY YOU WILL LIKE DU PONT SPRAY GLAZE

1. Outshines the best wax job
2. Lasts as long, or longer than wax
3. Saves time: spray it on—wipe it off
4. No masking of glass is needed
5. Spray whole car at one time, or
6. Interrupt the job if you wish
7. Costs little; 6 oz. does almost any automobile
8. Applied only in shops with a spray gun

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

Dealers everywhere acclaim it as a great time- and work-saver—and along with enthusiastic customers, they praise the glorious, lasting shine this new Du Pont Spray Glaze process puts on a car!

Why spend long hours waxing cars when you can apply Du Pont Spray Glaze in much less time and get even better results? Save time—turn out more jobs with the same amount of labor—make extra profits.

Du Pont Spray Glaze (patent applied for) is not just a polish or wax but a new car-beauty process applied with a high-pressure spray gun. It is exclusively for shop application.

Throughout 1951, big Spray Glaze ads will appear in SATURDAY EVENING POST and COLLIER'S, sending customers to you for this completely new car-beauty process!

For an initial investment of approximately $50 you can start a profitable Spray Glaze business. Ask your jobber about it.

Here's what dealers say...

"Easier and faster to apply... and we have never seen a better lustre." Mike Hrabec, Cecil Motors, Inc., Dodge & Plymouth, Elkton, Md.

"Since we took on Du Pont Spray Glazing we have practically eliminated all ordinary polishing and waxing." Al Bonifacino, Diamond Midtown Station (Gulf), Wilmington, Del.

"Du Pont Spray Glaze is superior to any polish or wax on the market. Have done over 100 Spray Glaze jobs." Francis Sheeler, East Gay St. Garage, West Chester, Pa.

For a FREE DEMONSTRATION

Mail this coupon to Chemical Specialties Section, DU PONT, Wilmington, Del.

Dealer's Name _____

Street Address _____

City _____ *State* _____

YOU WOULDN'T NEED THE ROCK, IF YOU HAD...
SOUTHERN FIBER BLOCK
SOUTHERN
FRICTION MATERIALS CO. - CHARLOTTE, N.C.



Martin W. Chamberlain has been appointed as business management manager of the Dodge Division, Chrysler Corporation. He succeeds Ernest C. Dock who was recently named assistant general sales manager.

for EXTRA PROFITS and EXTRA GOODWILL...
install RAMCO PISTON STABILIZERS on every Re-Ring Job!
RAMSEY CORP., ST. LOUIS, MISSOURI

Genuine SERVICE INDIANAPOLIS "Measurably Better" SPRINGS
SERVICE SPRING COMPANY
INDIANAPOLIS 6, INDIANA

Ask your jobber for this BONNEY TIE CLASP
A miniature Bonney Wrench made into a smart tie clasp. A perfect little beauty. Looks like silver. You'll want one to wear yourself—or as costume jewelry for your wife or best girl.
BONNEY FORGE & TOOL WORKS.





Howard P. Grove has been appointed to the position of general sales manager for the United States for Willys-Overland Motors, Inc. Mr. Grove is general manager for the factory-owned New York distributorship of Willys-Overland Motors Inc.

For Faster Better Easier Tube Flaring
IMPERIAL Flaring Tool with quick slip-on yoke
A favorite with service men! Makes proper 45° flares on copper tubing for tight SAE flare joints.
No. 193-F flares 3/16", 1/4", 5/16", 3/8", 7/16", 1/2" O.D. Tubing.
Order From Your Jobber.
THE IMPERIAL BRASS MFG. CO., Chicago 7, Illinois

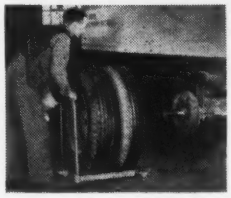
AUTOMOTIVE REPAIR EQUIPMENT
GUARANTEED CONDITION
—IMMEDIATE DELIVERY
G.E. 175 HP Dynamometer
Taylor Dynamometer, Model DX-328
Van Norman No. 222 Boring & Grinding Machine
Van Norman No. 666 Crankshaft Regrinder
Van Norman Super Rotary Surface Grinder, Model 444
Van Norman No. 555 Flat Type Surface Grinder
Van Norman No. 500 Valve Grinder
AARON MACHINERY CO., INC.
45 Crosby Street New York 12, N. Y.
WOrth 4-8233 Cable—Aarmach, N. Y.

HAVE YOU A JOB FOR A TRAINED MECHANIC?
We have a number of alert young men who have completed intensive training in Automotive Mechanics, Automatic Transmissions and Body-Fender Rebuilding. They learned their trades thoroughly by working on actual equipment under personal, expert supervision. If you need a trained man, we invite you to write for an outline of our course, and for a prospectus of the graduate. No fees, of course. Address:
Placement Manager, Dept. P102-6
COMMERCIAL TRADES INSTITUTE
1400 GREENLEAF CHICAGO 26

OVERSIZE AND STANDARD REAR WHEEL STUDS
for all Trucks
ORDER FROM YOUR JOBBER
CHAMP-ITEMS, Inc.
6191 Maple Ave.
St. Louis 14, Mo.
SEND FOR CATALOG

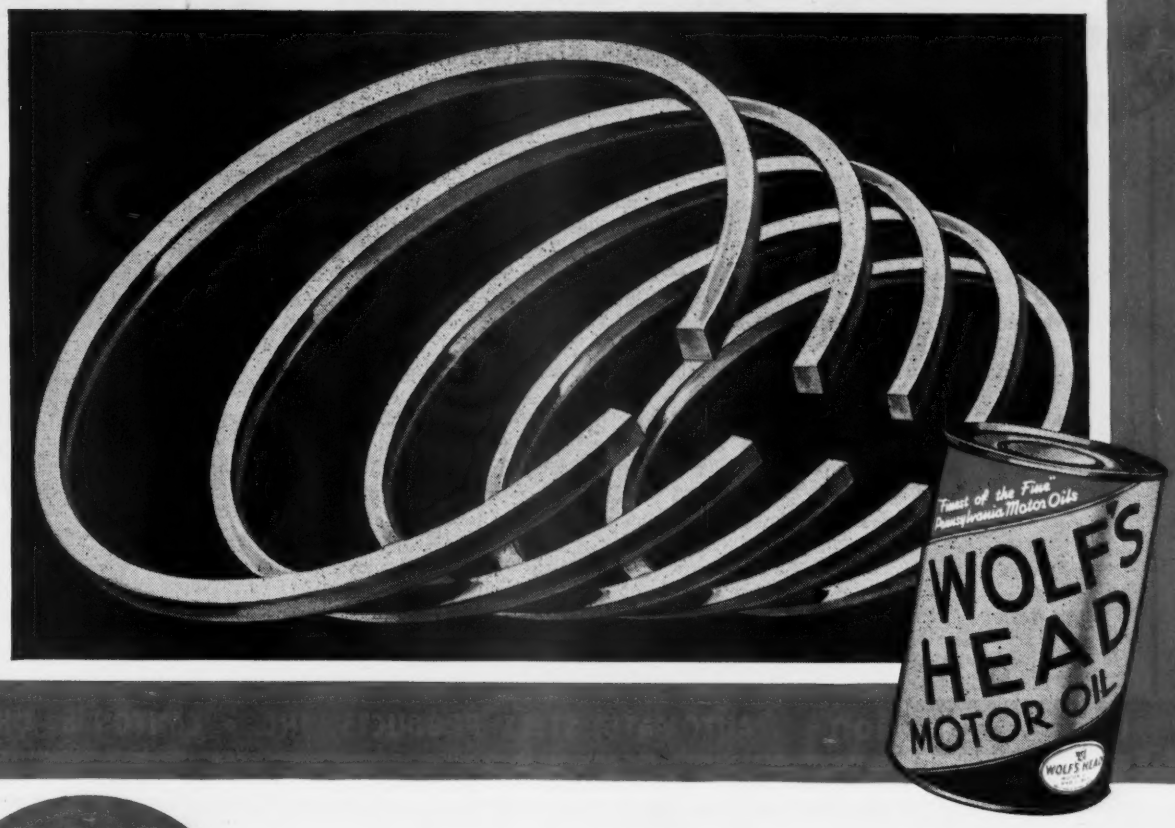
MORE MONEY
for you and your mechanics
Mechanics are faster on their feet than on their backs. Time studies show that with Globe Hoists every mechanic can do 10 hours' work in 8 hours.
Figure that in terms of the extra jobs you can turn out every day. You will see why Globe Hoists quickly pay for themselves, and earn extra money for you and your mechanics.
(Write for illustrated bulletin MA-315)
GLOBE HOIST COMPANY
1000 E. MERMAID LANE, PHILA. 18, PA.
(Factories at Des Moines, Iowa and Phila., Pa.)

NEW DUAL WHEEL DOLLY



Dual Wheels replaced, removed quickly—easily.
IMMEDIATE DELIVERY
$20.50
F.O.B. Hatboro
One Man Operation
No Strain — No Lifting — No Greased Floor — No Adjusting. See your Jobber or write us.
ALEXANDER-TAGG INDUSTRIES, INC.
Dept. E Hatboro, Pa.

PICTURES OF PERFECTION



IT PAYS TO BE PARTICULAR ABOUT YOUR OIL

Precision-made Piston Rings, built to operate at fantastic speeds and high temperatures, are man-made "Pictures of Perfection" . . . yet a microscopic film of oil is their *only* protection against friction, excessive wear, heat, corrosive acids.

Be sure that you recommend and sell the finest protection that money can buy . . . WOLF'S HEAD MOTOR OIL—100% Pure Pennsylvania, "Premium Grade." WOLF'S HEAD, made from nature's finest crude, is refined *three steps further* than ordinary oil . . .

1 THOROUGHLY DEWAXED—flows freely at all temperatures and gives instant, full-bodied lubrication.

2 DOUBLE DISTILLED—free from impurities that cause excessive oil consumption, sludge, undue wear.

3 TRIPLE-FILTERED—highly resistant to sludging and oxidation. Non-corrosive to bearings. Won't thin out at high temperatures or get sluggish at low temperatures.

WOLF'S HEAD means the "Finest of the Fine" to millions of motorists everywhere!

Free! "Rules-of-the-Road" Folder. Contains safety hints, speed laws, driving regulations for all states. Send for your copy and information.



Wolf's Head Oil Refining Co., Inc., Oil City, Pa., New York 10, N. Y.

WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pure Pennsylvania "Premium Grade" — Member, Penna. Grade Crude Oil Association

AUTOMATIC STEEL PRODUCTS • INC. • CANTON 6 • OHIO • U.S.A. • Highest Quality **Linmar WATER PUMPS**

ANOTHER AUTOMATIC PRODUCT SOLD BY YOUR AUTOMOTIVE JOBBER

Unexcelled in Quality and Performance

All Linmar Water Pumps are factory duplicates of original equipment and all parts are interchangeable with those supplied by the car manufacturers. The unexcelled service record of Linmar Water Pumps in the field has been made possible by the use of the finest new materials obtainable, precision manufacture and exacting inspection and tests.



TOLERANCES	Manufacturing limits as low as .0002" are maintained on critical operations.
BEARINGS	Equipped with nationally known and advertised bearings, lubricated for life.
SEALS	Bellows type, made of synthetic rubber impervious to oil and reinforced to prevent cracking.
SHAFTS	Equipped with long wearing, precision manufactured shafts.
FITTINGS	Factory installed with special water repellent lubricants injected into the pumps during assembly.
BACK PLATES	Installed on all those pumps designed to require this part.
GASKETS	All necessary gaskets of the highest quality obtainable.
FINISH AND PACKING	All Linmar Pumps are specially treated for rust prevention. They are sturdily packaged and attractively labeled with the manufacturers part and the year and model of the car they fit.
GUARANTEE	All Linmar Water Pumps are fully guaranteed against defects in material and workmanship and for exact fit on the car designated. *Write for Catalog L-3*

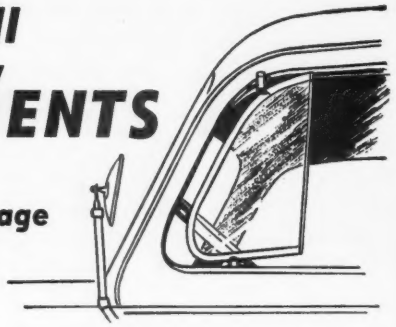
Linmar Division AUTOMATIC STEEL PRODUCTS, INC. • CANTON 6, OHIO

A Substantial Supplier to the Automotive Industry for Over 20 Years

AUTOMOBILE JACKS • AUTOMOTIVE GRINDING WHEELS • ONE-END LIFTS • MERCURY CLUTCHES

Install TRUK-VENTS

Turn Safety Glass Salvage into Profits!





They're Rugged—Easy to Install and Stay Put

You buy the Triple chrome-plated Truk-Vent Frame and use your own safety glass salvage for a neat profit. They install easily, in a matter of minutes, on the outside of the regular truck window. Truk-Vents will not loosen, rattle or vibrate. There's one for every make and type of truck. Every truck is a prospect. Get in on this triple profit now . . . profit from frame —glass and installation.

Ask for Bulletin 50-5C

EXCLUSIVE NATIONAL TRUK-VENT FRAME DISTRIBUTORS

SOMMER & MACA *Glass Machinery Co.*

Automotive Department

3624 SOUTH OAKLEY AVENUE CHICAGO 9, ILLINOIS

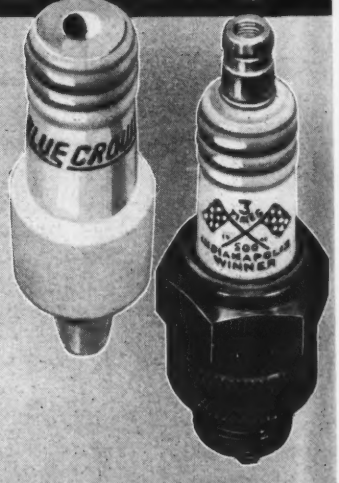
The INSULATOR Makes the Spark Plug What It Is!

FRENCHTOWN INSULATORS

Enabled

Blue Crown Spark Plugs

to endure the gruelling punishment involved in winning the 1950 National AAA Championship, and 3 times winner at Indianapolis.



What* FRENCHTOWN INSULATORS *can do for others, they can do for you

FRENCHTOWN PORCELAIN CO.

Sales Office, 8 Muirhead Ave., Trenton, N. J. Factory, Frenchtown, N. J.

Important—

VALVOLINE HPO MOTOR OIL FULLY MEETS NEW MOTOR OIL RECOMMENDATIONS

Because of new lubrication requirements in some 1950-51 cars, certain automobile manufacturers now specify HEAVY DUTY type motor oil. VALVOLINE HPO fulfills every one of these new requirements—and retains all its natural advantages.

VALVOLINE was ready and waiting to lubricate the new-type engines long before they were delivered—was the very first to offer heavy duty 100% Pennsylvania motor oil.

An Example of Valvoline's Amazing Performance

Some new cars have hydraulic valve lifters, made with clearances as fine as fifty-millionths of an inch — yet Valvoline HPO meets their exacting requirements with ease. Older cars *also* benefit by Valvoline's ability to provide added protection for newly designed motors.

The heavy duty features of Valvoline are *extra* features; they make Valvoline HPO an even greater value in protection and economy for *all* cars. NATURE Made Valvoline BETTER; Valvoline Is Better For Every Motor.

Remember—VALVOLINE HPO Is A Heavy Duty Oil

VALVOLINE

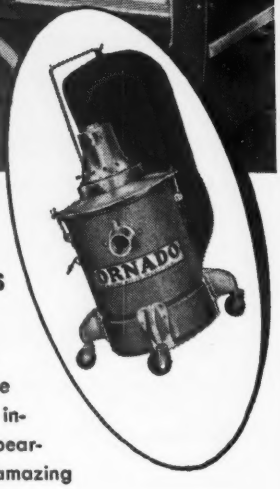
100% Pennsylvania

MOTOR OIL

FREEDOM-VALVOLINE OIL COMPANY, *Freedom, Pennsylvania. An Affiliate of Ashland Oil & Refining Company.* Offices: New York, Toronto, Pittsburgh, Jacksonville, Atlanta, Detroit, Cincinnati, Chicago, Los Angeles, San Francisco, Portland, Seattle, Vancouver, B. C.

AMAZING NEW TORNADO® AUTO-VAC CLEANER





cleans upholstery and floors in a very few minutes!

One stroke positive pickup removes dirt, grime, soot and grease from auto floors, upholstery and interiors. Restores factory-fresh appearance. Anyone can operate this amazing machine. 3 models to choose from.

build a profitable, repeat car wash business!

Pleased customers will appreciate the clean, fresh-smelling car interior and will come back again and again. You can get a good price for this extra service!

FREE DEMONSTRATION

Ask your jobber or supplier to demonstrate Tornado Models 92, 101 or 180.

WRITE FOR BULLETIN 574

BREUER ELECTRIC MFG. CO.—Dept. MA-6
5100 N. Ravenswood Ave., Chicago 40, Ill.
Please send us your Bulletin No. 574.

Name_____

Address_____

City_____ State_____

BREUER ELECTRIC MFG. CO.
5100 N. RAVENSWOOD AVE. • CHICAGO 40, ILL.

Hold Most Any Shape with

Aero-Seal HOSE CLAMPS



The Universal Worm Drive Clamp



Pull an Aero-Seal clamp tight—it will never let go. Vibration proof. No distortion at point of clamping. Conforms easily to any shape, locking multiple pipes or ducts together, clamping odd-sized connections. Stainless steel—resists corrosion. Available in screwdriver or thumbclamp types. Write for free sample.

BREEZE CORPORATIONS, INC.
40 South Sixth St., Newark 7, N. J.

ANOTHER BREEZE MARK PRODUCT

BONDING
a BRAKE SHOE is a
MANUFACTURING JOB!

The Miley method of bonding shoes is the ONLY one using an absolutely *uncured* lining. This means:

1) No squeaks, no powdering.
2) Bonding and curing is done in ONE baking operation.
3) Brakes get a closer, tighter fit.
4) Your customers get a quicker, safer stop with longer mileage.

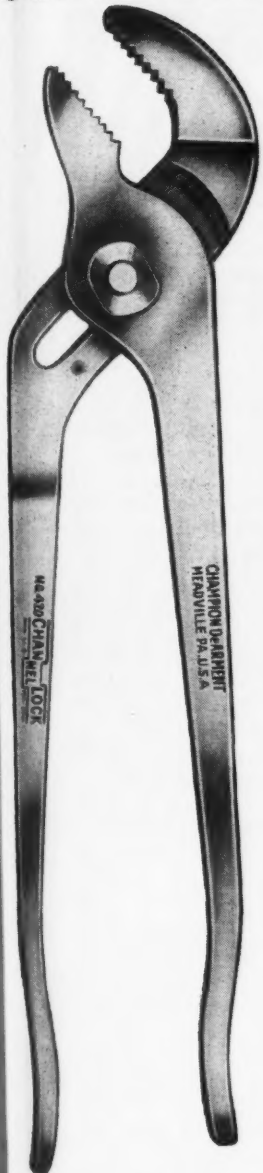
So—let your Miley Jobber or Rebuilder do your Mileybonding for you — they can do it easier, faster, cheaper, with greater profit to you.

Mileybond is your Bond for Safety—Satisfaction

L. J. MILEY CO.
Manufacturers of
Brake Lining, Brake Shoes, Re-built Cylinders
18 S. SANGAMON, CHICAGO 7, ILL.

YOU NEED *Fewer* TOOLS WHEN YOU USE CHANNELLOCK PLIERS

Made only by
CHAMPION DEARMENT



Here's Why...

Channellock pliers are versatile—you'll find many more uses for Channellock than for ordinary pliers. From bumper to bumper, under the hood or under the car Channellock pliers do the job better.

Channellock pliers are not household gadgets, they are skilled craftsmen's tools. Made by Champion DeArment with nearly 3/4 of a century of experience, they are designed for long, efficient service.

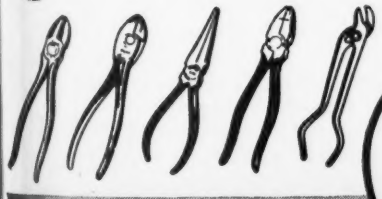
Ask your jobber to show you Channellock. Use it, feel it—then Buy it.

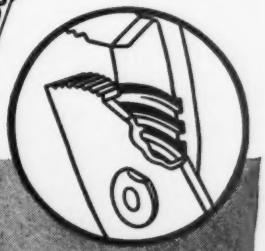
And remember — Only Champion DeArment makes Channellock.

Send for Catalog D8 today.

CHAMPION DEARMENT TOOL CO · Meadville, Pa.

Channellock pliers are listed in the Yellow Pages of most Telephone Directories under "Tools"





Only
CHAMPION DEARMENT makes . . .
CHANNELLOCK
TRADE MARK REG. U. S. PATENT OFFICE

Help Customers Hold Off



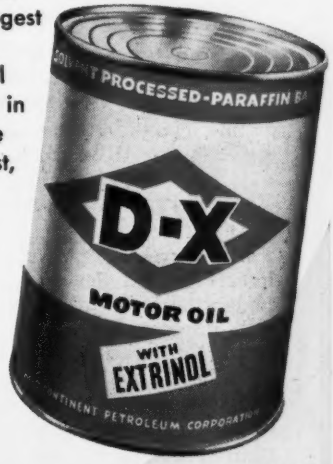
Recommend

D-X MOTOR OIL with Extrinol

This year, many of your customers' cars will pass their 3rd birthday — the "repair age." You can help them — and *all* your customers — avoid costly repairs by recommending wear-saving, *guaranteed* D-X Motor Oil with Extrinol.

Extrinol is the "extra" that helps D-X keep motors cleaner, protect bearings and fight sludge. It makes D-X a better oil for all cars—particularly those near the "repair age."

You'll find that D-X is a profitable oil for your service department, too. This year D-X is backed by the biggest advertising campaign in its history. Motorists will want it — and you'll cash in on the demand. If you're located in the Middle West, write for information about the profitable D-X Franchise for car dealers.



D-X

MID-CONTINENT PETROLEUM CORPORATION
TULSA, OKLA.

Waterloo, Ia. · Terre Haute, Ind. · Omaha, Nebr.
Chicago, Ill. · Minneapolis, Minn.

Index to Advertisers

This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

AC Spark Plug Div.....24-25
Aaron Machinery Company... 166
Accurate Parts Mfg. Co..... 104
Air Express Division..... 23
Alemite Div., Stewart-Warner Corp. 35
Alexander-Tagg Industries, Inc. 166
American Brakeblok Div., Amer. Brake Shoe Co..... 131
Aro Equipment Corporation.. 15
Auto Specialties Mfg. Co..... 142
Automatic Steel Products, Inc. 168

Barrett Equipment Co.....100-101
Bendix Aviation Corp. Bendix Products Div..... 139
Blackhawk Mfg. Co.....86-87-89
Bonney Forge & Tool Works.. 166
Breeze Corp., Inc..... 170
Breuer Electric Mfg. Co..... 170
Briggs Shock Absorber Company, The 98
Brunner Mfg. Co..... 136
Buick Motor Div..... 14
Burd Piston Ring Co..... 150

Casco Products Corp..... 127
Champ-Items, Inc. 166
Champion DeArment Tool Co. 171
Chevrolet Motor Div..... 34
Choldun Manufacturing Corp. 7
Chrysler Corp. 10
Chrysler Motors Parts Corp... 97
Clayton Manufacturing Co.... 102
Cleveland Graphite Bronze Co. 84
Commercial Credit Corp..... 155
Commercial Trades Institute. 166
Converto Mfg. Co..... 174
Crescent Company, Inc., The.. 30
Curran Corporation 174

De Koven Manufacturing Co.. 141
De Soto Div. Chrysler Corp. 160
DeVilbiss Company, The 129
Dodge Div. Chrysler Corp.... 152
Domar Sales Co..... 164
du Pont de Nemours & Co., Inc., E. I..... 165
Dura-Bond Bearing Co..... 112
Durkee-Atwood Company 103

Echlin Manufacturing Co..... 134
Electric Auto Lite Company 12-13-83-92-93-99
Everhot Products Company... 122

Farm Journal 124-125
Federal-Mogul Service....6-91-110
Federated Metals Div..... 158
Felt Products Mfg. Co..... 147
Fram Corporation 117
Freedom-Valvoline Oil Co.... 169
Frenchtown Porcelain Co..... 168

Gabriel Company, The..... 133
Gatke Corp. 137
Globe-Hoist Company 166
Grey-Rock Div. 9
Grote Mfg. Company, Inc., The 146

Harley-Davidson Motor Co.... 126
Hastings Mfg. Co.....2nd Cover
Haywood Industries (Modac). 153
Heller Bros. Company..... 114
Herbrand Tools 132
Hershey Metal Products, Inc.. 116
Hollingshead Corp., R. M..... 21
Homestead Valve Mfg. Co..... 88
Hygrade Products Div..... 149

Imperial Brass Mfg. Co..... 166

Johns-Manville Corp.....28-29
Johnson Bronze Co..... 130
Johnson Products, Inc..... 120

K & W Products, Inc..... 138
Kelsey-Hayes Wheel Co..... 111
King Quality 85

Lincoln Electric Co., The..... 144
Linmar Div. Automatic Steel Products, Inc. 168
Lion Oil Company..... 135

McQuay-Norris Mfg. Co...118-119
Manbee Equipment Div..... 161
Maremont Automotive Products, Inc. 26
Martin-Senour Co. 157
Mechanics Co-op. 174
Mid-Continent Petroleum Corp. 171
Miley Co., L. J..... 170
Minnesota Mining & Mfg. Co. 27
Modac-Haywood Industries... 153
Moog Industries, Inc..... 11
Moraine Products Div. G.M... 31

National Motor Bearing Co., Inc. 151
New Britain Machine Co..... 123
Nox-Rust Chemical Corp..... 79

Oldsmobile Div. G.M. Corp.... 173
Owatonna Tool Co..... 128

P & D Mfg. Co..... 96
Packard Electric Div..... 115
Pedrick Piston Rings..... 8
Pennzoil Company, The..... 148
Perfect Circle Corp..... 81
Perfection Gear Co..... 174
Permatex Co., Inc..... 1
Proto Tools 2
Prest-O-Lite Corporation 17-18-19-20
Purolator Products, Inc..... 22

Ramsey Corporation 166-3rd Cover
Raybestos Div. Raybestos-Manhattan, Inc. 4
Reynolds & Reynolds Co., The 163
Rochester Products Div..... 121
Rootes Motors, Inc..... 94

Saginaw Steering Gear Div... 156
Saturday Evening Post..... 113
Sealed Power Corp.....36-77
Service Spring Co..... 166
Snap-on Tools Corp.....107
Sommer & Maca Glass Machinery Co. 168
Southern Friction Materials Co. 166
Stewart-Warner Corp. (Alemite Div.) 35
Storm-Vulcan, Inc. 140
Studebaker Corp. 75
Sun Oil Company..... 16
Sunnen Products Co..... 159
Superior Screw & Mfg. Co.... 174

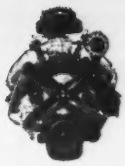
Thermoid Company 106-143-Back Cover
Timken Roller Bearing Co., The 32
Tuthill Spring Co..... 90

U. S. Industrial Chemicals, Inc. 95
United Motors Service..... 105

Wagner Electric Corp..... 33
Walker Manufacturing Co. 5-108-109
Weatherhead Co., The..... 145
Wilkening Mfg. Co..... 8
Williams & Co., J. H..... 162
Wilson's Son, Wm. M..... 164
Wiry Joe 30
Wittek Mfg. Co..... 174
Wolf's Head Oil Refining Co.. 167
Wynn's 164

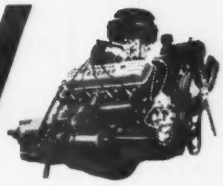
Zink Corp., The Howard..... 154

ROCKET!



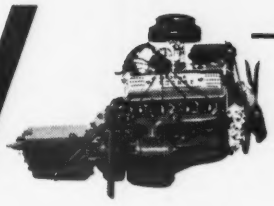
→ POWER SENSATION OF THE NATION FOR OVER TWO YEARS!

ROCKET!



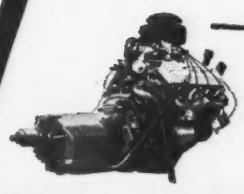
→ ACCLAIMED BY MORE THAN 700,000 OLDSMOBILE OWNERS!

ROCKET!



→ PROVED BY BILLIONS OF MILES OF OLDSMOBILE DRIVING!

ROCKET!



→ MOST TALKED ABOUT ENGINE IN MOTOR CARS TODAY!



"Rocket" performance is proved performance . . . proved by the sales records set by this outstanding high-compression engine in the past thirty months! There are more—*far more "Rockets" on the road than any other high-compression engine!* The "Rocket" sells people on Oldsmobile as no other mechanical feature has sold a car in years! And this is doubly true today! Major advancements have made the new "Rocket" Engine even more efficient—even more economical! That's one of the big reasons the men who sell the great new Super "88" and "98" Oldsmobiles are convinced: It's SMART to BE with OLDS!

OLDSMOBILE

PRODUCT OF GENERAL MOTORS

NO MORE CARBON SCRAPING



*DUNK AND DRIER BASKET INCLUDED

Nothing Decarbonizes and Cleans CARBURETORS, FUEL PUMPS, PARTS Like..

U. S. PAT. #2318842*
GUNK DUNK BENCH Carburetor and Parts Cleaning Kit
New 6½ gal. size deep "Vapor-catcher" design pail.

New–Improved–More Potent*

GUNK HYDRO-SEAL

*1. Faster . . . Terrific penetration . . . new improved oder.
2. Quickly digests and removes carbon gum, paint, lead, makes possible accurate visual inspection and fitting of delicate metering mechanisms, jets, orifices and diesel nozzles . . . without etching.
3. Lasts more than one year . . . due to water blanket.
4. Works hot or cold . . . Rinses wet or dry.
5. Patented Double Barrel Performance Guaranteed.

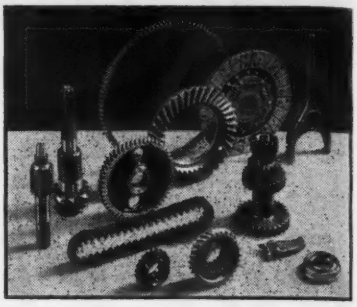
A WORD OF CAUTION
If it doesn't bear the Genuine GUNK trademark, it may be a partly diluted imitation—and will not give you the Safety and Advantages of Genuine GUNK and should be flatly refused.

SOLD BY BETTER JOBBERS EVERYWHERE
Write for Name of Nearest Stocking Jobber
Flatly Refuse Substitute Imitations

IMMEDIATE DELIVERY
1 GALLON OR A TANK CAR

CURRAN CORP.
MFG. Chemists
LAWRENCE MASS.

PERFECTION PARTS
are
Certified to excel



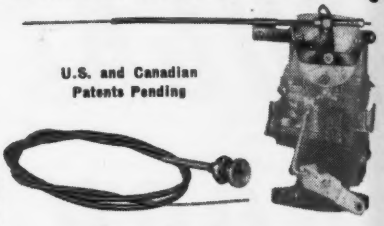
PERFECTION GEAR CO.
HARVEY, ILLINOIS

Aldo
have the
Spring Loaded Device

- Our patented spring loaded device assures proper carburetor mixture, giving quicker, easier starting. Installs without removing carburetor. Fully guaranteed.
- *Also Mfrs. of Complete Line of Universal Hood and Choke Controls.*

MANUAL CHOKE CONVERSION KITS

U.S. and Canadian Patents Pending



Superior Screw & Mfg. Co., Inc.
1924 N. Leamington Chicago 39

FROM A PICK-UP WITH FEW USES
to a DUMP with 101 uses



CONVERTO hydraulic *picUPac*

With the picUPac any ordinary pick-up truck becomes a versatile unit of 101 uses—a combination hauling and dumping vehicle with a lifting capacity of up to 6,000 pounds. No power take-off is required, and the general appearance of the truck remains unchanged. The picUPac is rugged, engineered to "take it" under the toughest of fast dumping jobs. It comes equipped with either the manually-operated or electrically-driven, cab controlled Blackhawk pump.

Make the quickly installed Converto available to your customers now, so that they may earn extra payload profits. Ask your distributor for complete information.

Converto MANUFACTURING CO.
CAMBRIDGE CITY, IND.

WITTEK *Automotive* HOSE CLAMPS



Since 1920
The Standard of the Industry For Leakproof Hose Connections.

Sure-Tite



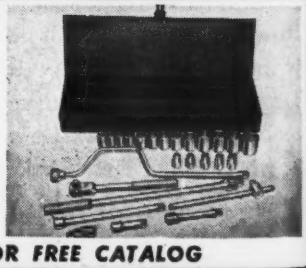
NOC-OUT

Automotive HOSE CLAMPS

WITTEK MANUFACTURING CO.
4333 W. 24th Pl., Chicago 23, Ill.

TOOLS AT WHOLESALE

DIRECT FROM FACTORY
Full line of top quality, fully guaranteed, chrome, factory-new mechanics hand tools. You save
HALF REGULAR PRICE
for tools of this quality. Our Permanent Price Protection Plan guarantees you wholesale prices.

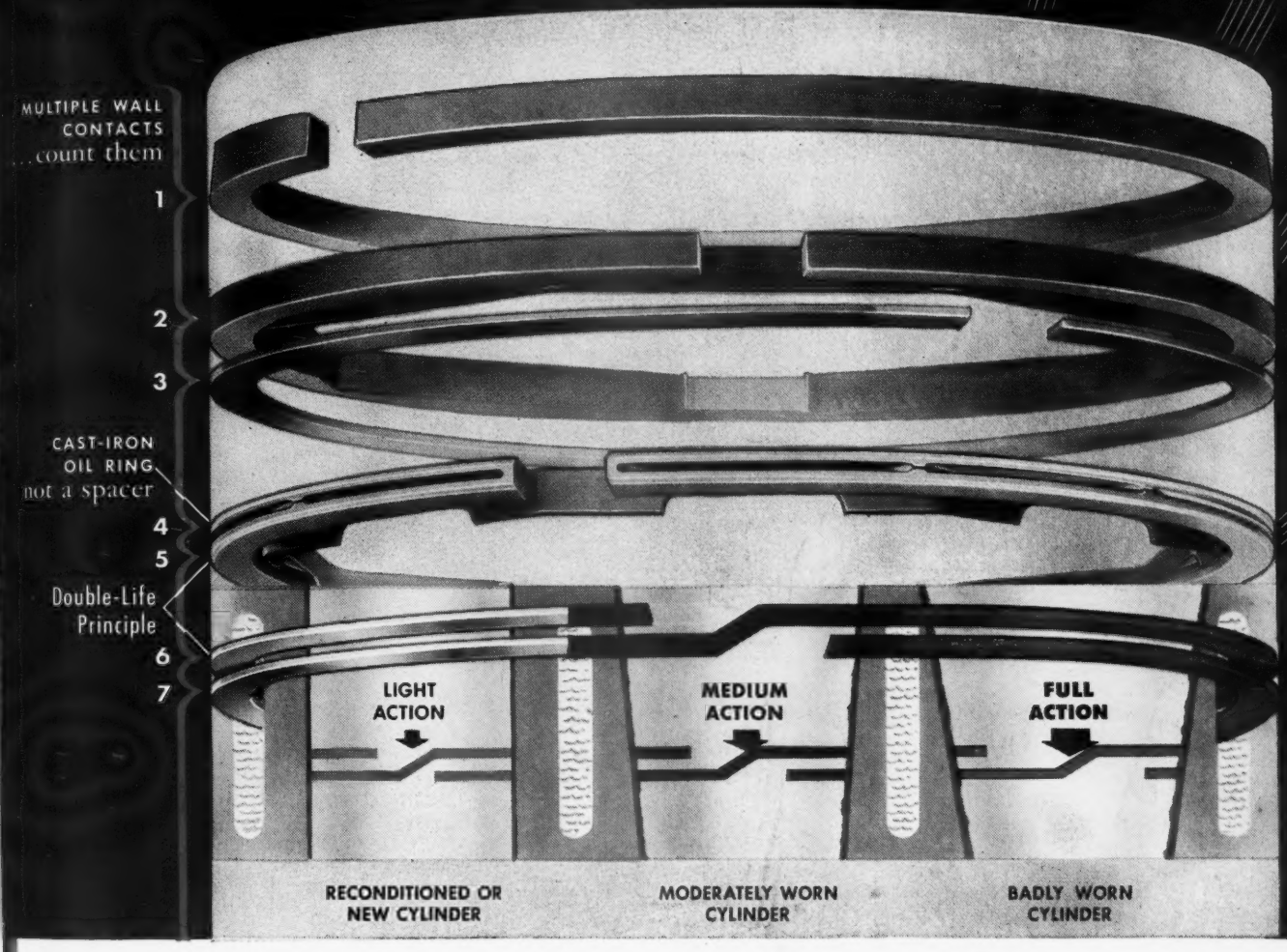


WRITE TODAY FOR FREE CATALOG

MECHANICS CO-OP
Dept. F OAKLAND 8, CALIFORNIA

it's Never a Pressure Question

when you use Ramco 10-Up Rings!



Always ——— Automatically Right . . .

an exclusive reason why in addition to controlling oil...

RAMCO 10-up ACTUALLY CURBS WEAR

STABILIZATION instead of pressure is the key to the Ramco Method of oil control that not only controls oil but minimizes further wear! Patented Ramco Principles developed through 25 years of specialization in the problems of compensating for wear in used engines plus extreme precision in manufacture are the answers. Instead of high wall pressures, Ramco employs multiple wall contacts, patented Double-Life Principle with full fledged cast-iron oil ring, and the automatic adjustment action of Spiro-Seal, the ring that "bridges the gap."

That's why you can back all your 10-Up jobs with the famous Ramco 10,000 Mile (or 1 year) Guarantee on rings and labor. That's why:

Ramco 10-Up Piston Rings are Right for ANY Job Re-Bore or Re-Ring . . . Car . . . Truck . . . Bus . . . Tractor

RAMCO RE-POWERING STATION

RAMCO RE-POWERING* Program Helps You to Help America Fight Premature Engine Wear

Use the Ramco RE-POWERING Program to show customers at oil pumping is a warning sign which, if unheeded, will ult in Premature Engine Wear. Sign up for the RE-POWERING Station Sign. Get the help of this nationally advertised rogram to sell more piston rings, arburetion, Ignition, and Cooling services. See your Ramco Jobber Today.

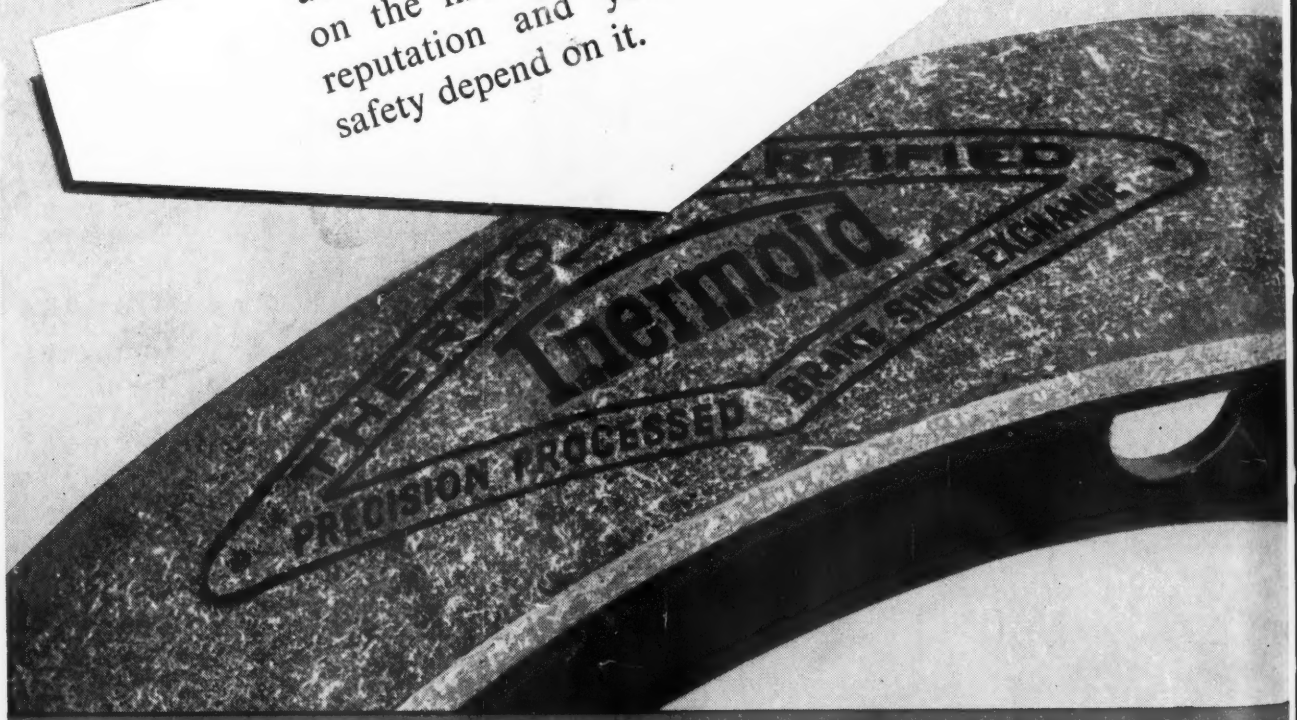
*Nationally Advertised in POST Collier's MOTOR AGE

Ramsey Corporation, St. Louis, Mo. R5491

Look for This Stamp of Quality

(Never accept Unbranded Brake Lining)

There are all kinds of brake lining being sold today. Many are little more than "glorified linoleum." When you buy brake lining . . . when you exchange brake shoes . . . look for the Thermoid name and the words Precision Processed, on the lining. Remember! Your reputation and your customers' safety depend on it.



Thermoid

the standard of precision processing in brake lining, brake blocks, hydraulic fluid, cylinder assemblies, hydraulic brake parts

Thermoid Company • Trenton, New Jersey